# VS. UniSystem™

# KIT MANUAL

Nintendo®

## FOR INSTALLATION IN

DONKEY KONG™
DONKEY KONG JUNIOR™
DONKEY KONG 3
MARIO BROS.™
POPEYE*

PAK GAMES ONLY

## WARNING

If the replacement parts and components in this VS. UniSystem™ kit are not installed exactly as instructed herein, there may be radio frequency interference created in violation of F.C.C. class A standards.

## WARNING

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a class A computing device pursuant to subpart J of part 15 of F.C.C. rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference; in which case, the user at his own expense will be required to take whatever measures may be required to correct the interference.

## WARNING

Use of non-Nintendo parts or modifications to your VS. UniSystem™ parts and components may adversely affect the safety of your game, and may cause injury to your players.

# TABLE OF CONTENTS

# I. INTRODUCTION

## VS. UniSystem™ kit

VS. UniSystem™ kit enables you to change Donkey Kong*, Donkey Kong Jr.*, Mario Bros.*, Donkey Kong 3*, and Popeye** into a VS. UniSystem* in less than one hour. A VS. UniSystem* will use any non-interactive VS.-Pak*.

Before you begin, be sure you are properly prepared. Make certain you have selected the proper VS. UniSystem* kit for the particular game you are replacing. Next thoroughly read this instruction manual to familiarize yourself with the proper procedures. Make certain that you have all the tools necessary to complete the process.

If you have any questions, please call Nintendo Service at 1- (800)- 633-3236.

NOTE: This VS. UniSystem™ kit is not usable on an original wide-body (700W) Mario Bros. game.

* Donkey Kong, Donkey Kong Jr., Mario Bros., Donkey Kong 3, and VS. UniSystem are trademarks of Nintendo of America Inc.

** A trademark of King Features Syndicate, Inc.

# II. Contents of VS. UniSystem kit

| Parts Name | Quantity | Remarks |
|---|---|---|
| MDS-CPU P.C. Board Assembly | 1 | without EPROMS and PPU |
| MGS-UP Operation Panel Assembly | 1 | with harness |
| MGS-UP Front Screen (600W) Assembly | 1 | |
| MGS-UP Side Decal | 2 | |
| VS. UniSystem™ Manual | 1 | |
| 062 Shield Cover Complete Assembly | 1 | |
| 072-36P Edge Connector Harness | 1 | |
| 072-44P Edge Connector Harness Assembly | 1 | |
| MGS Serial Number Plate | 1 | |
| Flat Cable Tie | 1 | |
| Wood Screw 3.1 x 10 | 4 | |
| FCC Class-A Label | 1 | |
| FBI Sticker | 1 | |
| **Following parts are for TKG, DJR, DKC, TMA only** | | |
| 054 Shield Cage | 1 | |
| Video Monitor Bracket (L) | 1 | |
| Video Monitor Bracket (R) | 1 | |
| Video Monitor Support Bar | 2 | |
| Blind Cardboard (large) | 1 | |
| Carriage Bolt 6 x 30 | 6 | |
| Cap Nut M6 | 6 | |
| Cap Nut M5 | 4 | |
| Machine Screw 5 x 12 | 4 | |
| Wood Screw 3.5 x 13 | 9 | |
| Ground Wire (E) | 1 | |
| Hole Template | 1 | |
| **Following parts are for TPP only** | | |
| Power Supply and Transformer Assembly | 1 | 821B-7B Power Assembly |
| Fuse Set | 1 | |

## III. List of Tools Needed

Flat (standard) screwdriver

Phillips screwdriver

7mm nut driver

8mm nut driver

10mm nut driver

1/4" or 6.5mm drill bit

Electric reversing drill

Phillips bit (for drill)

Staple gun

Paper stapler

Lacquer thinner

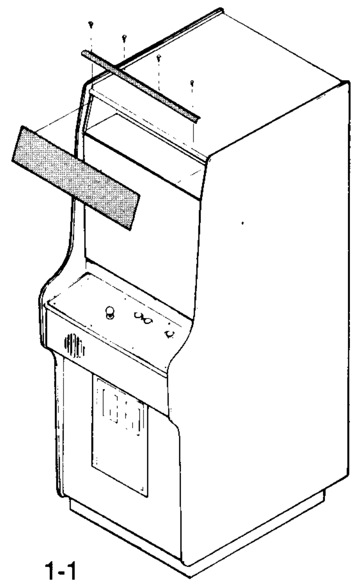
Denatured alcohol or other cleaner

Large wire cutter

**Note:** Many steps require the use of a phillips screwdriver and having a phillips screwdriver bit for your drill will greatly speed up these steps.

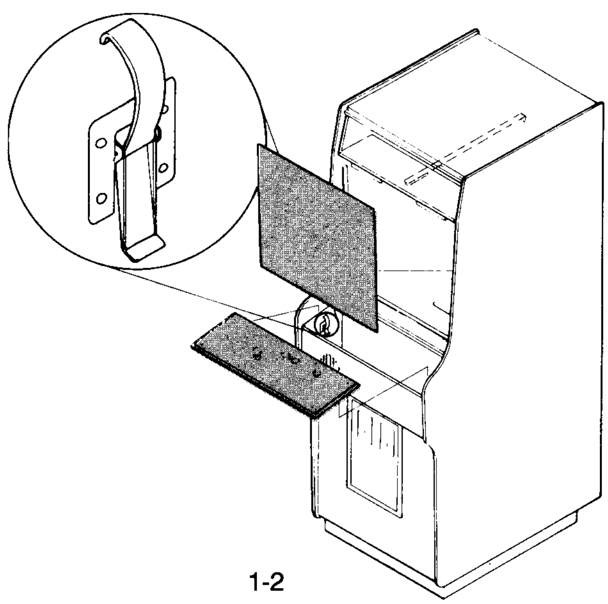
# IV. Step-by-step instructions

1. Remove marquee/header (see illustration 1-1)
   A. Remove four (4) top trim screws
   B. Remove marquee plexiglass
   C. Replace marquee/header with new VS-Pak header
   D. Replace top trim and four (4) top trim screws



1-1

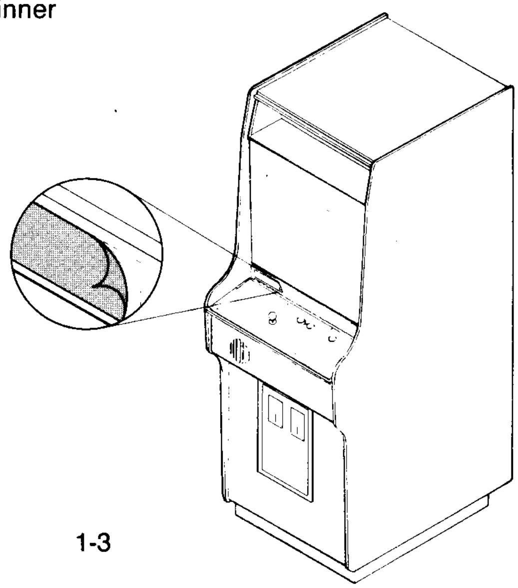
2. Remove old control panel and front screen (see illustration 1-2)
   A. Undo control panel holddown clamps
   B. Disconnect harness and remove control panel
   C. Remove front screen by sliding back front screen clamp (access from back door)



1-2

**Note: For Donkey Kong, Donkey Kong Jr. ONLY**

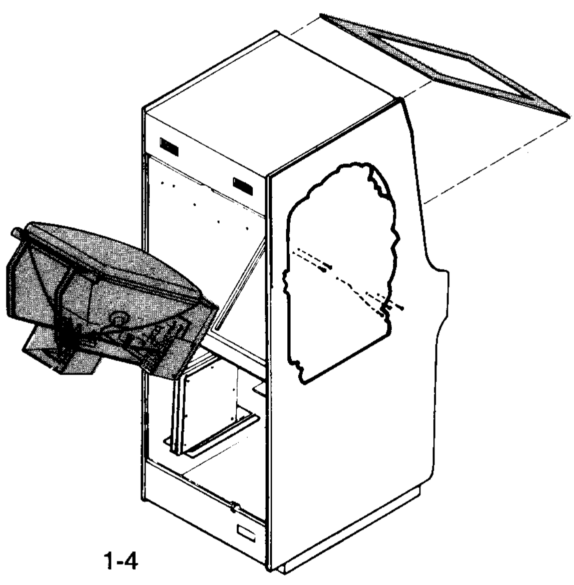
3. Remove instruction label (see illustration 1-3)
   A. Spray label with lacquer thinner
   B. Wait 15 minutes and remove with putty knife
   C. Clean area with cloth and lacquer thinner



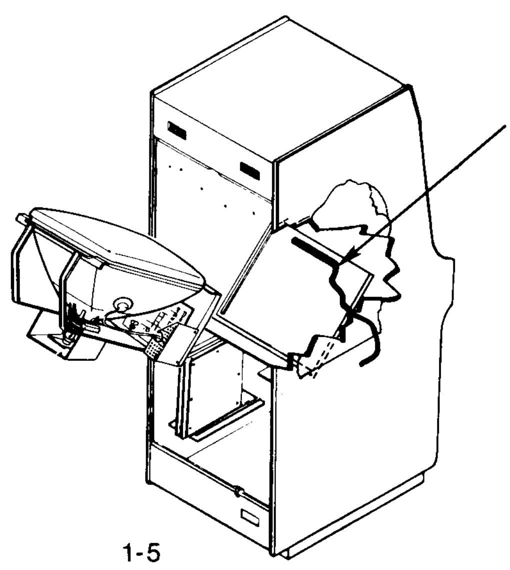
1-3

**Note: For Donkey Kong, Donkey Kong Jr. and Donkey Kong 3 ONLY**

4. Remove monitor
   A. Unplug monitor connections and undo wire ties
   B. Remove blind cardboard on monitor only
   C. Remove monitor, upper monitor support bar and all carriage bolts (see illustration 1-4)
   D. Remove old side decal
   E. **IMPORTANT! Disconnect monitor ground wire at location shown in illustration** (see illustration 1-5)



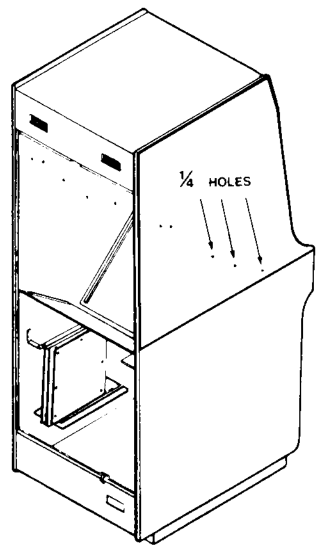
1-4



1-5

**Note: For Donkey Kong, Donkey Kong Jr. and Donkey Kong 3 only.**

5. Side panels should have five (5) holes each. If your game has only two (2) holes, use template provided in kit and drill three (3) 1/4-inch or (3) 6.5-mm holes where indicated (see illustration 1-6).

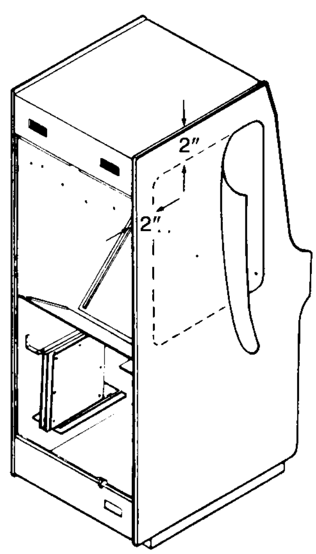



1-6

**Note: This step is for all games**

6. With old side decals removed, clean side panel with alcohol and install new VS. UniSystem decals. Decals are placed parallel to top and back of game 2″ from edge. (See illustration 1-7)

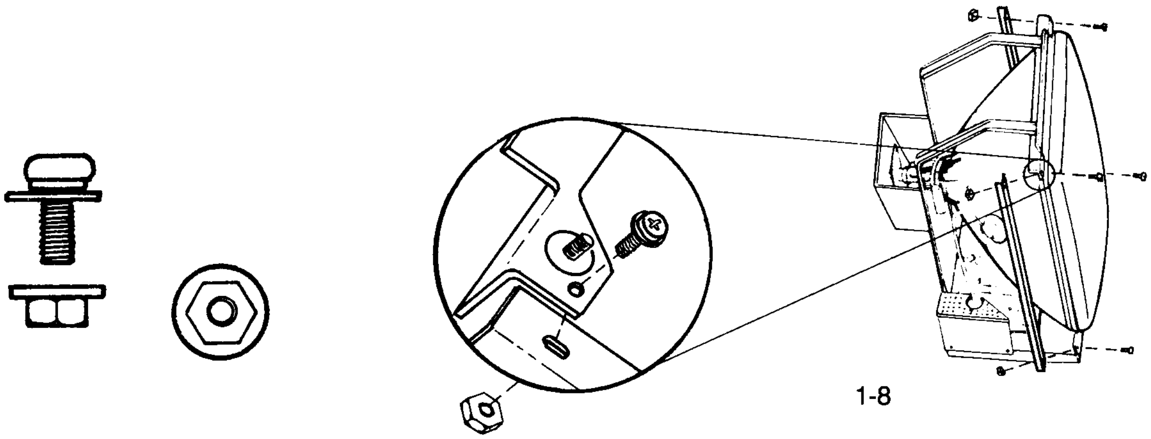
**See decal application sheet on page 18**




1-7

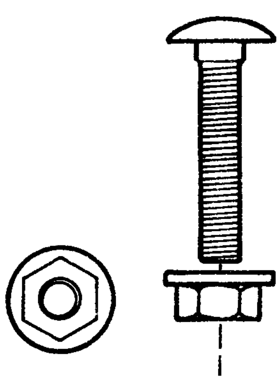
**Note: These steps are for Donkey Kong, Donkey Kong Jr. and Donkey Kong 3 ONLY.**

7. Install side support bars on monitor (see illustration 1-8)

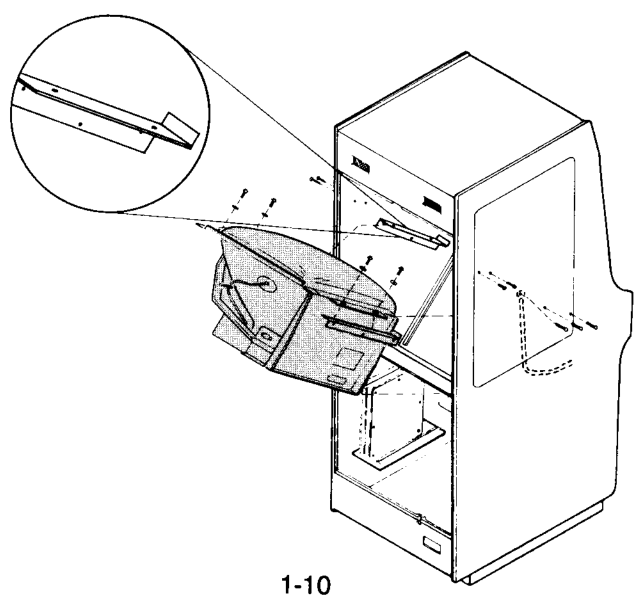


1-8

A. Install new horizontal monitor mounting brackets to side panel with flange toward front of cabinet and pointing up. Note: use carriage bolt as shown (see illustration 1-9 & 1-10)
B. Install monitor in horizontal position
C. Monitor is placed on top of side bracket supports
D. **IMPORTANT! Reconnect the monitor ground wire (disconnected in step 4E) to carriage bolt shown** (see illustration 1-10)



1-9

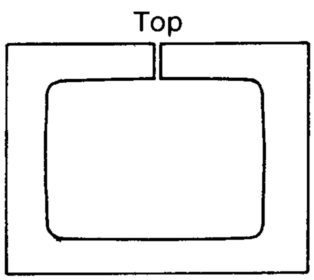


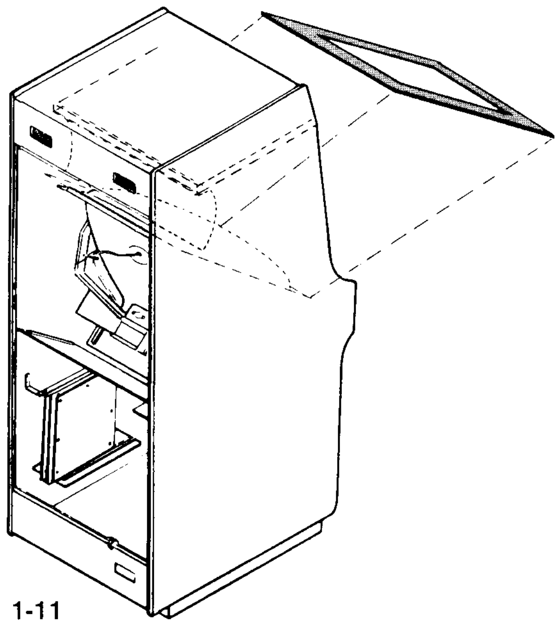
1-10

**Note: For Donkey Kong, Donkey Kong Jr. and Donkey Kong 3 ONLY**

8. Install new blind cardboard (see illustration 1-11)

   A. Remove adhesive backing on tape. Center blind cardboard on monitor and adhere. Place staple on top.



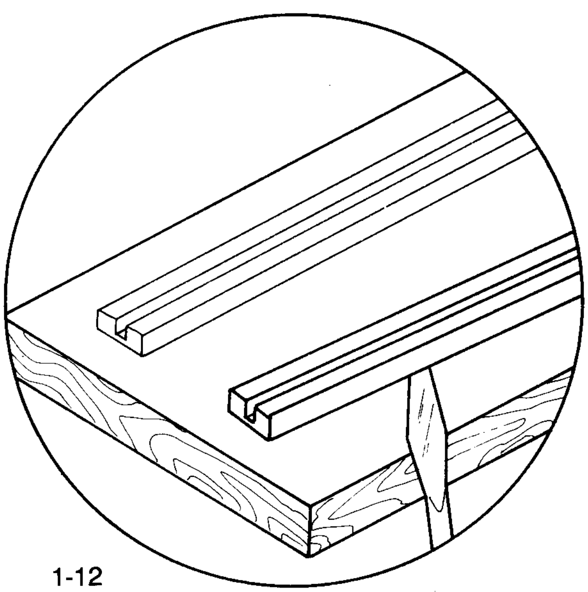



1-11

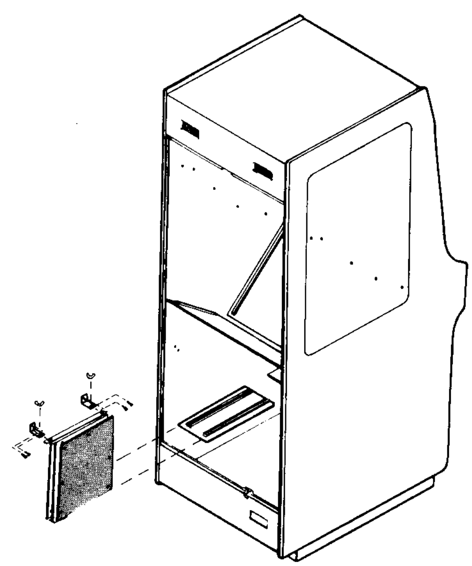
**NOTE: For Donkey Kong and Donkey Kong Jr. ONLY**

9. Remove old P.C. Board set and mounting brackets and old wire harness (see illustration 1-13)

   A. If P.C. Board wood shelf has slots made from square stock wood, remove these (see illustration 1-12)
   B. Remove old Main Wire Harness



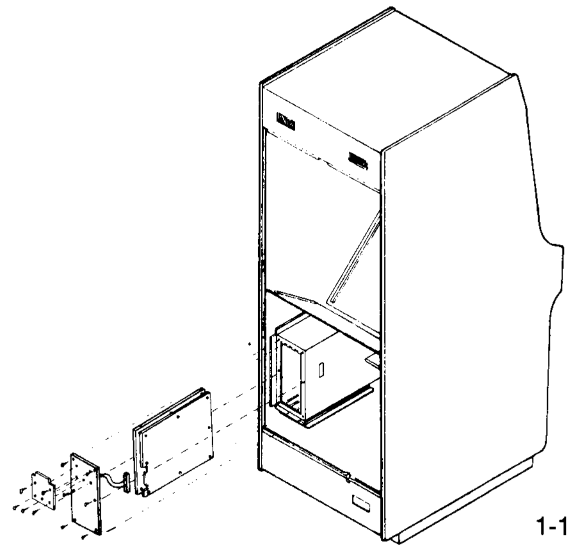
1-12



1-13

**NOTE: For Mario Bros. and Donkey Kong 3 ONLY**

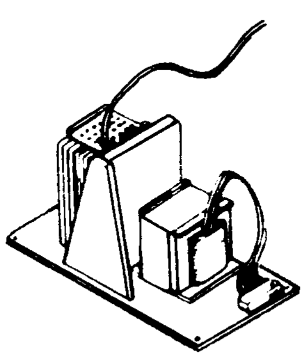
10. Remove old Shield cage assembly including Shield cover and old P.C. Board set



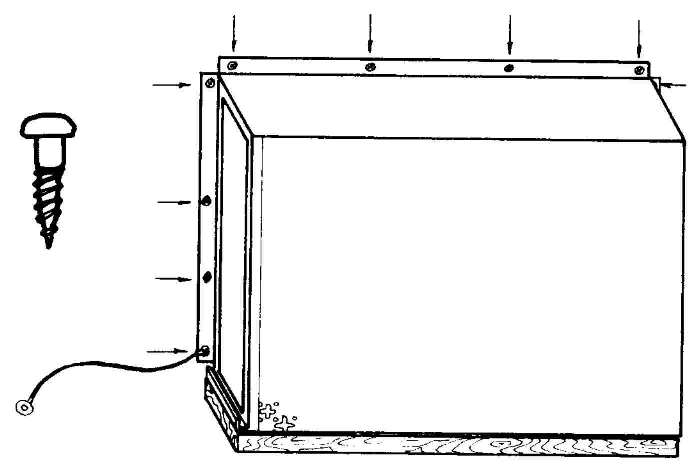
1-14

**NOTE: For Donkey Kong, Donkey Kong Jr., Mario Bros. and Donkey Kong 3 ONLY.**

11. Install new Shield cage so it is flush with rear of wood shelf and fasten with six (6) screws provided. **IMPORTANT! On lower left corner install ground harness and connect the other end to the mounting bolt on the power supply as shown** (see illustration 1-15 & 1-16)



1-16

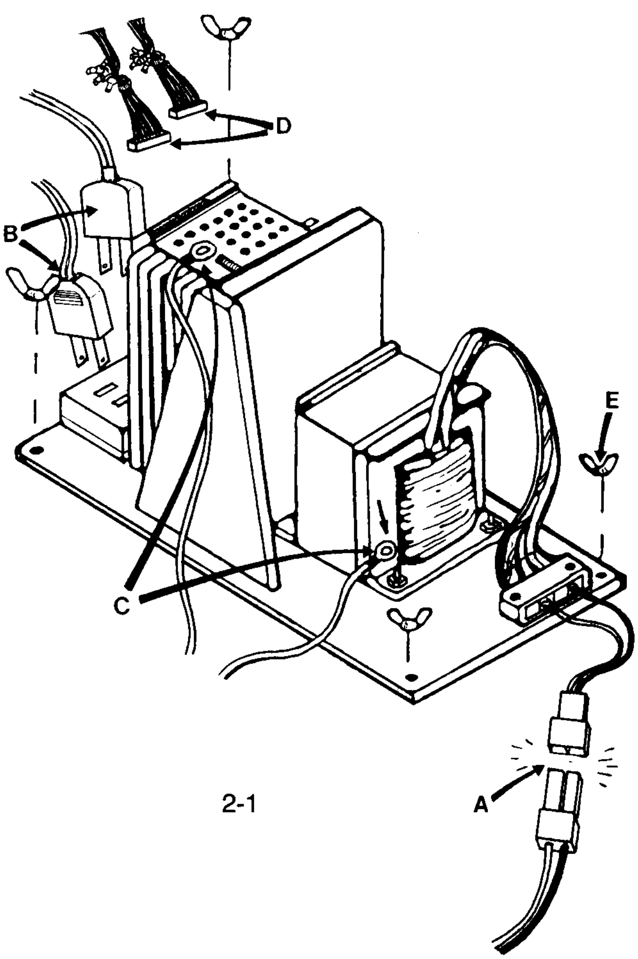


1-15

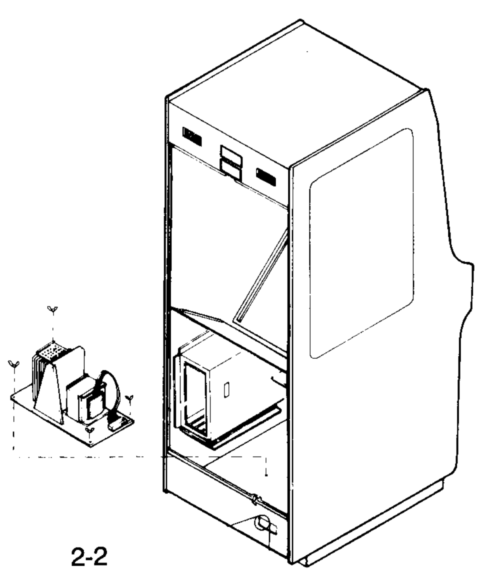
**These steps are for Popeye ONLY**

12. If you are replacing a Popeye game, remove old power supply transformer assembly (see illustration 2-1 & 2-2)

    A. Disconnect connector from switch plate
    B. Diconnect both plugs for monitor and lamp
    C. Disconnect ground harness connections
    D. Disconnect both power harness connections
    E. Remove four (4) wing nuts and take out old power supply
    F. Replace with new power supply assembly and tighten wing nuts
    NOTE: Bolts for wing nuts may push through bottom of game during mounting of new power supply unit. If this happens, simply push them back up when power supply assembly is in place.
    G. **Reconnect Steps A, B, & C being careful to get a good connection on Step C. Ground harnesses.**



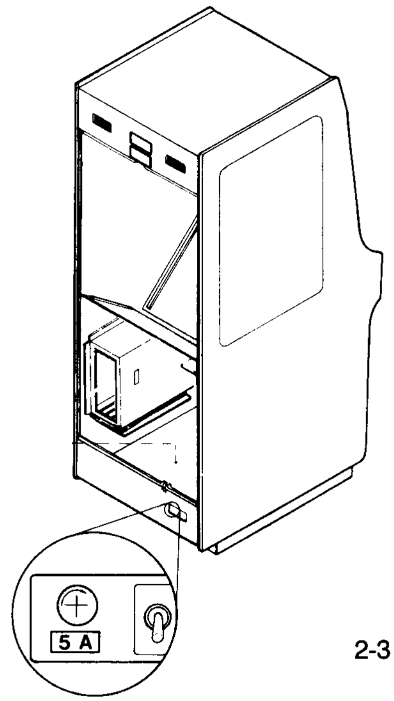

2-1



2-2

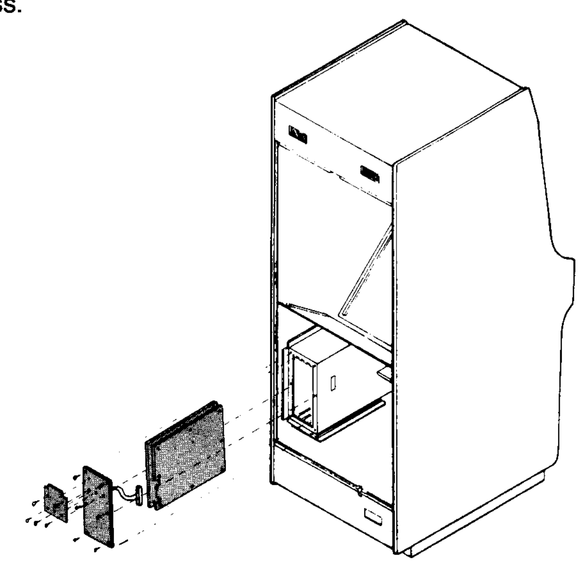
**These steps are for Popeye ONLY**

13. Change fuse to 5 AMP and change label to 5 AMP on switch plate (see illustration 2-3)




2-3

14. Remove old P.C. Board assembly and old Main Wire Harness (see illustration 2-4)
    A. Remove the six (6) machine screws that hold on the Shield cover.
       **IMPORTANT: Save these machine screws**
    B. Remove Shield cover and complete P.C. Board assembly.
    C. Remove old Main Wiring Harness.

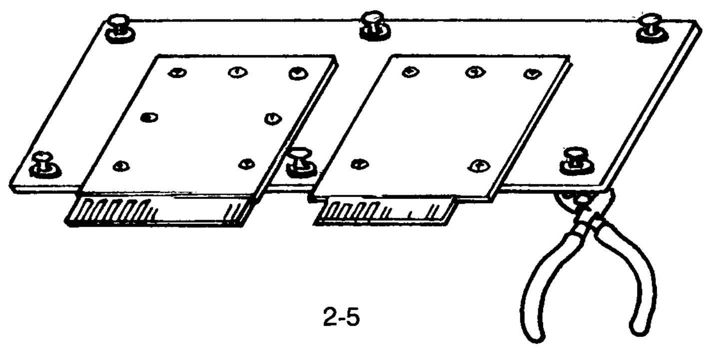


2-4

**IMPORTANT!! This step is for Popeye ONLY**

15. Modify new Shield Cover Assy to fit old Shield Cage (see illustration 2-5)

    A. Cut off six Fasteners on perimeter of Shield Cover Assy
    B. To install Shield Cover use six (6)machine screws from step 14A.

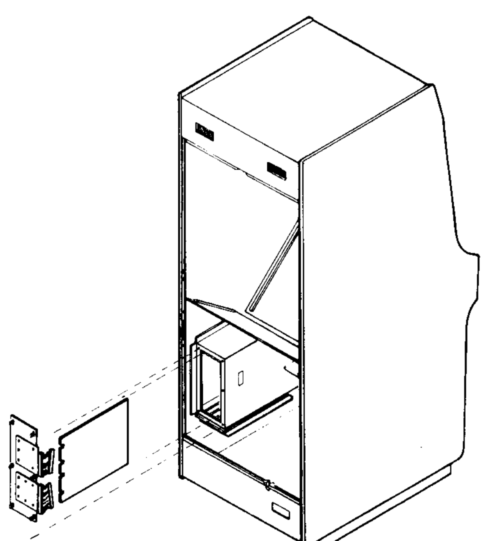


2-5

**NOTE: This step is for all games**

17. Install new MDS P.C. Board and shield cover assembly (see illustration 4-1)

    A. Attach short harnesses to P.C. Board with 36 pin connector on top
    B. Slide P.C. Board into Shield cage grooves
    C. Do not fasten Shield cover until after final check sheet and adjustments Section V is completed

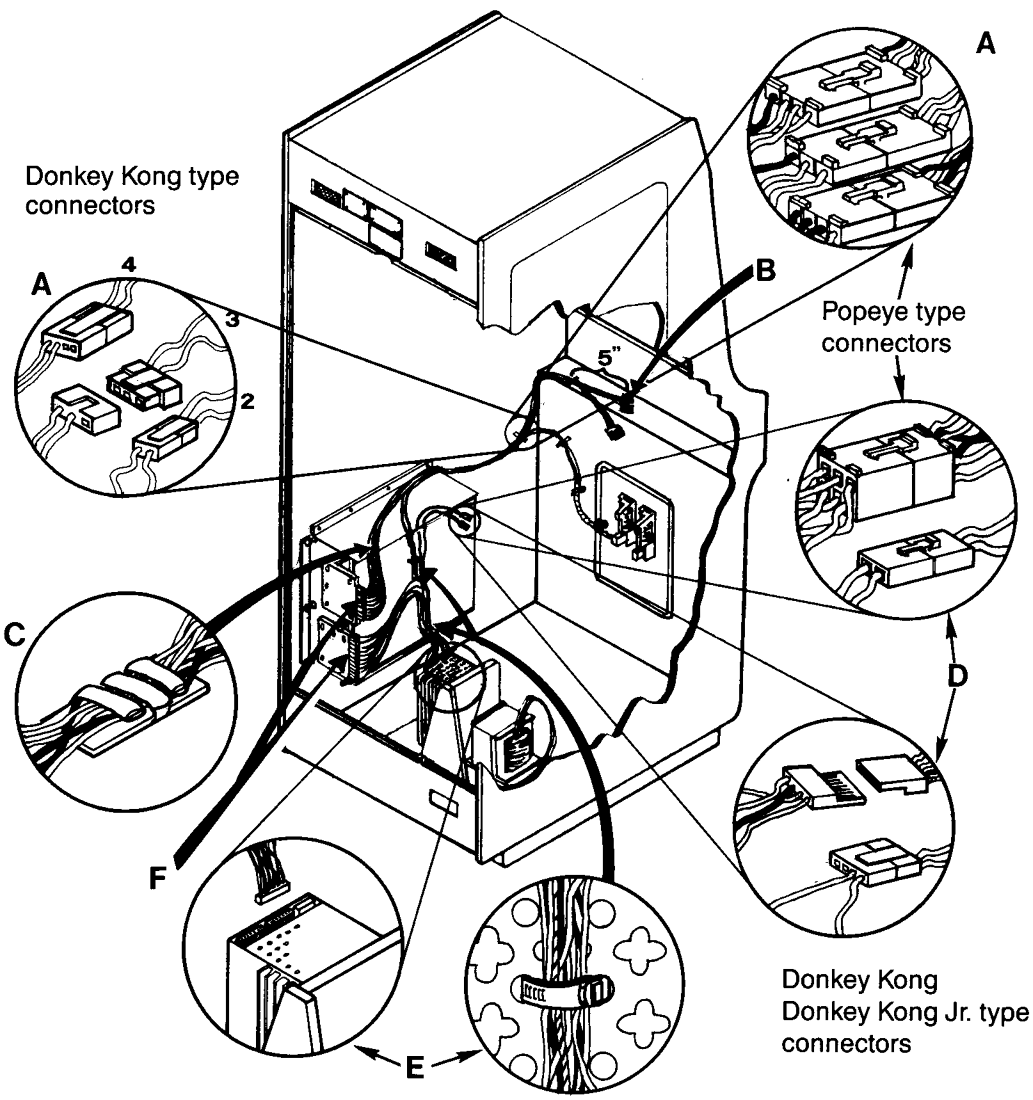


4-1

**NOTE: These steps are for all games**

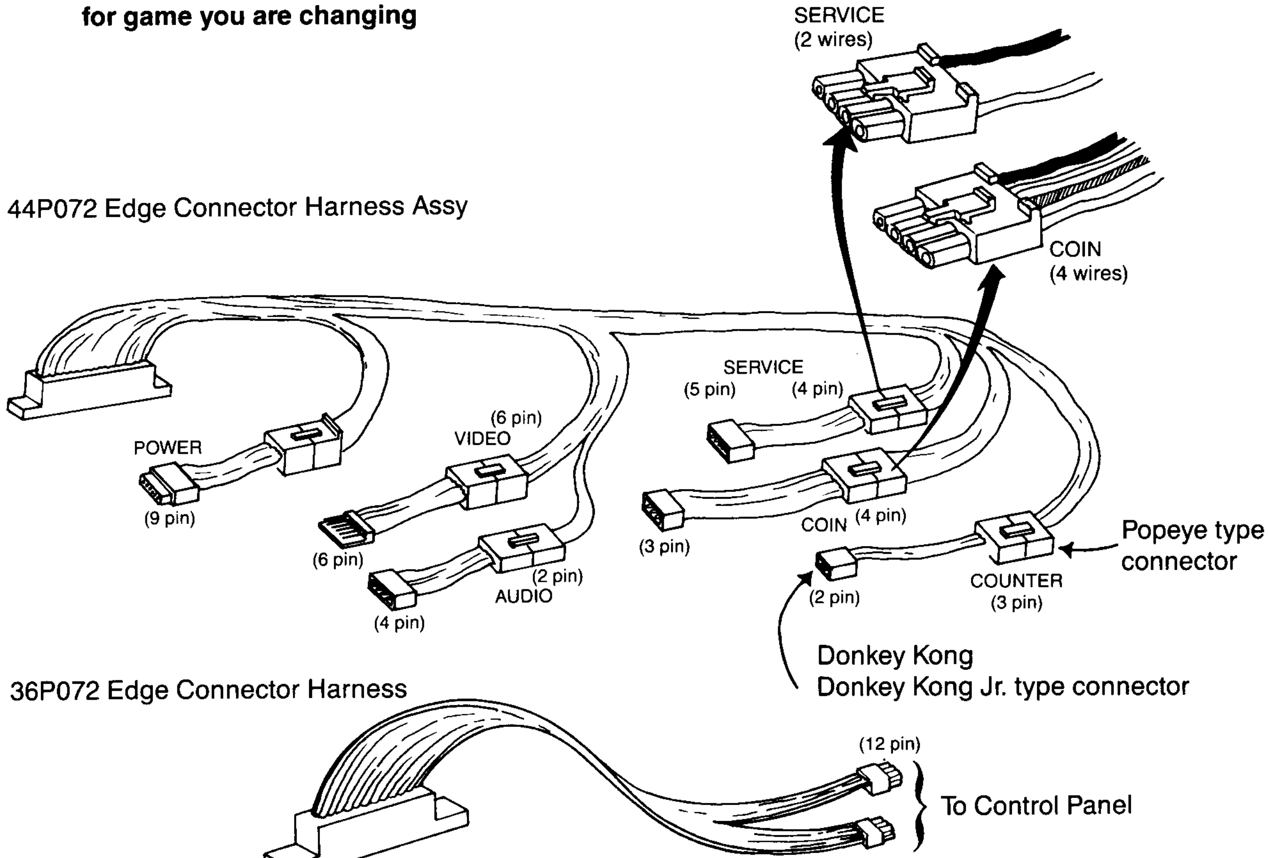
17. Connection of Harnesses (see illustration 4-2)

   A. Connect Coin, Service. Counter harnesses to 44P072 Edge harness.
   **Note:** Harnesses are different for Popeye type and Donkey Kong or Donkey Kong Jr. type (see illustration 4-3)
   B. Fasten Control Harness 072-36P to wire tie approximately 5″ from connectors.
   C. Route Harnesses through existing wire ties
   D. Connect Sound and Video Harness from monitor to Edge Connector Harness
   E. Connect Power Harness to Power Supply (9 pin connector) and fasten Power Harnesses to Shield Cage with cable tie.
   F. Connect 44P Edge Connector Harness and 36P Edge Connector Harness to Cover Assy.




4-2

**Note: Select proper connector for game you are changing**

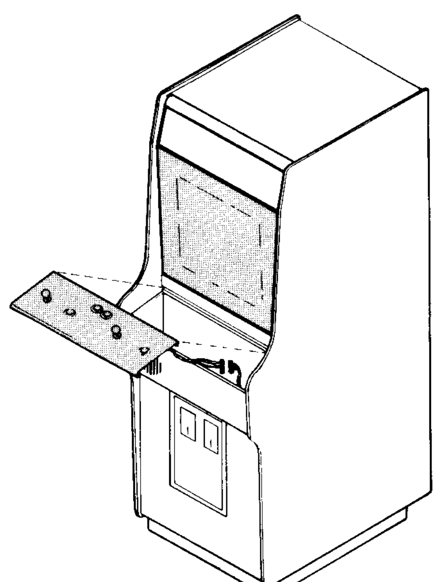



4-3

**Note: These steps are for all games**

18. Install new front screen and fasten with front screen clamp (see illustration 4-4)

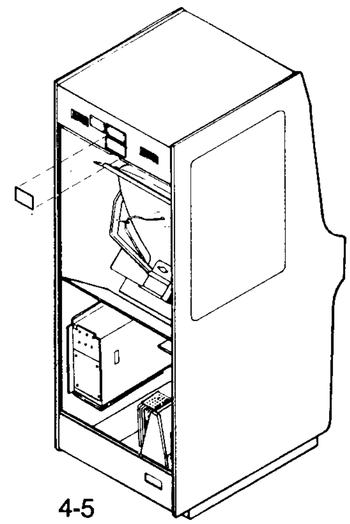
19. Connect new VS. UniSystem control panel to harness and fasten down (see illustration 4-4)



4-4

**NOTE: These steps are for all games**

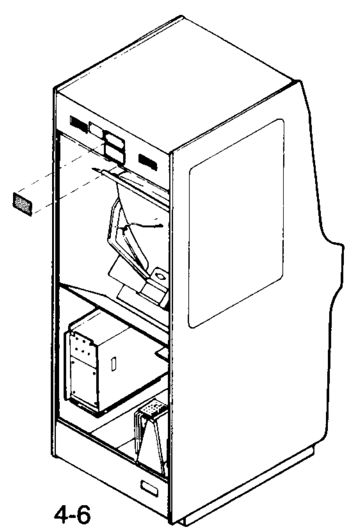
20. Screw on new serial number plate next to old plate.
**IMPORTANT! Do not remove old plate**
(see illustration 4-5)



4-5

21. Attach FCC Class A label (see illustration 4-6)

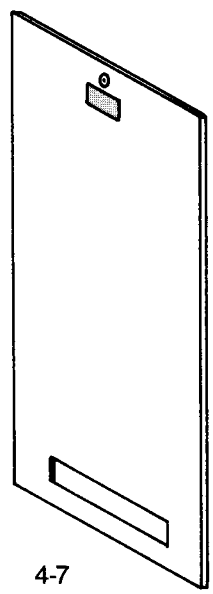
    A. Remove old FCC label
    B. Put on new FCC label and staple all four corners



4-6

22. Attach FBI sticker

A. Place label on back door just under lock (see illustration 4-7)



4-7

# Side Decal Application

**Step 1.**

Start by peeling the protective backing "A" down about 6 inches from the top.

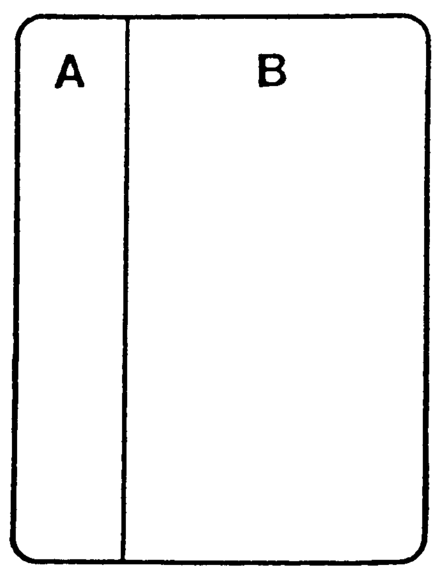
Place decal in desired position. Pull down slowly the remainder of the protective backing of "A."

While doing this, use a soft cloth to smooth decal onto side board, moving from top to bottom of decal.

**Step 2.**

Fold remaining decal back, exposing the unprinted side. Begin to peel protective backing "B" from center to right hand side "slowly."

Using soft cloth smooth decal onto side panel by running hand from top to bottom of decal, moving outward to the right hand side.




Front View

# V. Final Check Sheet and Adjustments

☐ 1. FBI sticker installed (MANDATORY)

☐ 2. New serial number plate installed (MANDATORY)

☐ 3. New FCC label installed (MANDATORY)

☐ 4. Fuse label changed (Popeye only)

☐ 5. P.C. Board adjustments made
(see P.C. Board adjustments page 20)

☐ 6. Monitor adjustments made
(see monitor adjustments pages 21-22)

☐ 7. Coins give credit

☐ 8. Controls on operation panel functioning

☐ 9. Sound checked

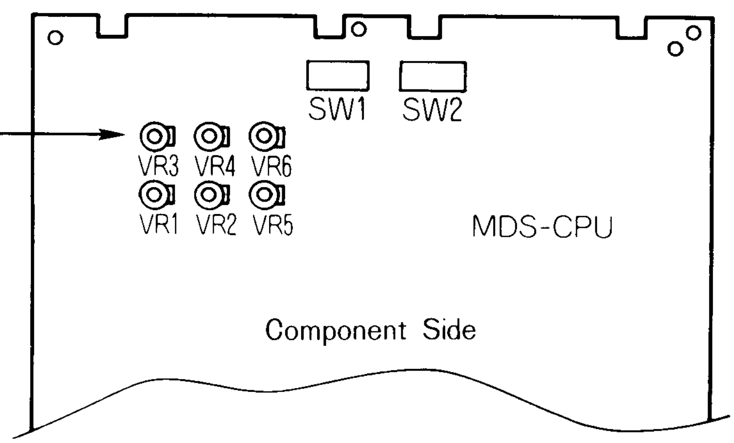
# Adjustments

After powering up the game, you will probably find that the screen's horizontal width is too narrow and the vertical height is too small. To make adjustment to the horizontal width, refer to the illustration on page 21. To adjust the vertical height, use the V-size adjustment on the rear of the monitor to make the picture larger (see page 22).

MDS P.C. Board

**NOTE: Only SW2 is used for VS. UniSystem™ games**

**NOTE:**
**Only these pots are used for VS. Unisystem VR3 VR4 VR6**



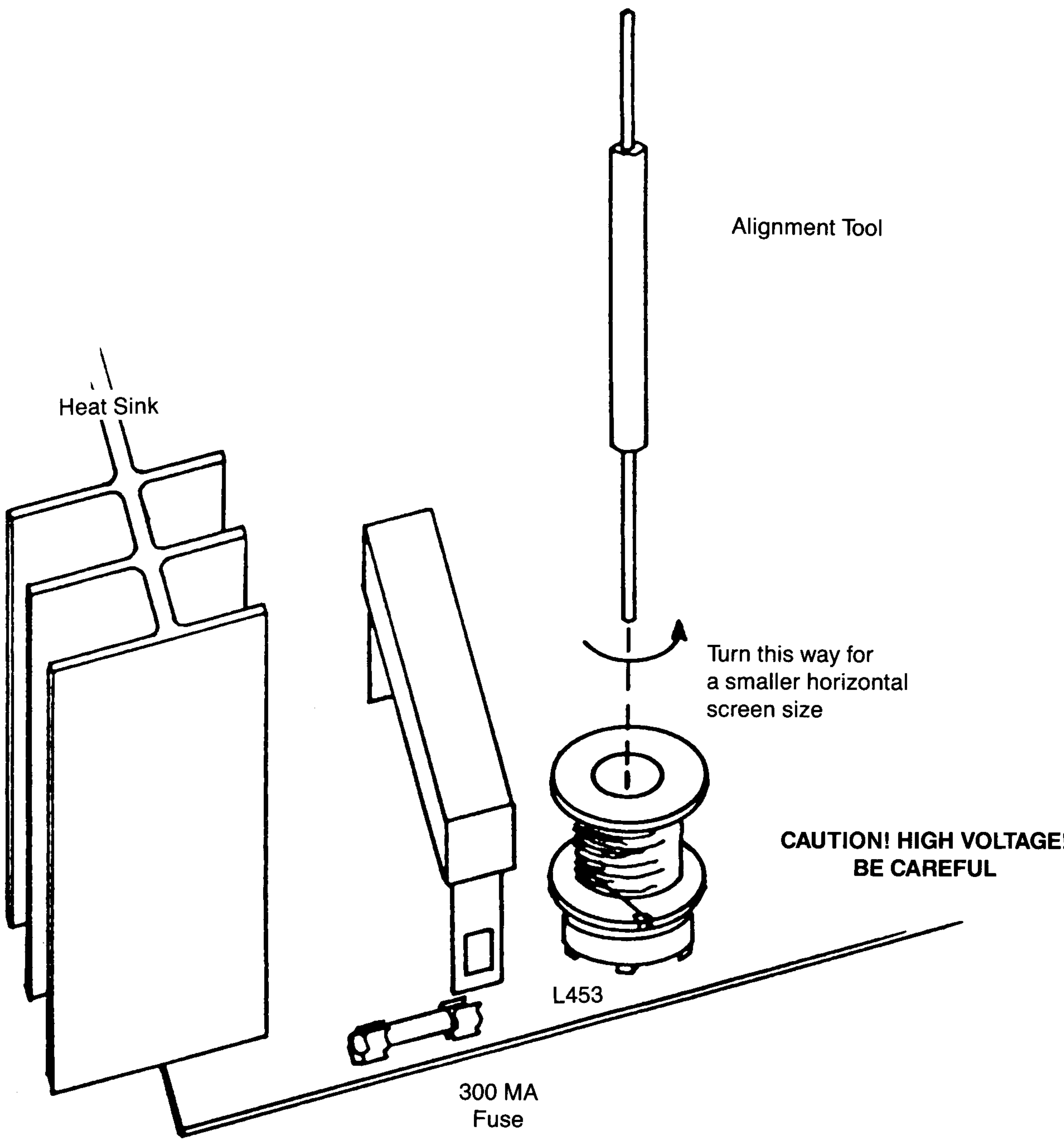

**Cautions:** (1) Since the Dip Switch settings (SW2 only) may be changed by new game software, refer to the new game instructions in Operation Manual for VS. Pak.

(2) Do not touch the fixed variable resistors (VR1, VR2, VR3, VR4, VR5, and VR6), as they have already been preset and do not need adjustment.'

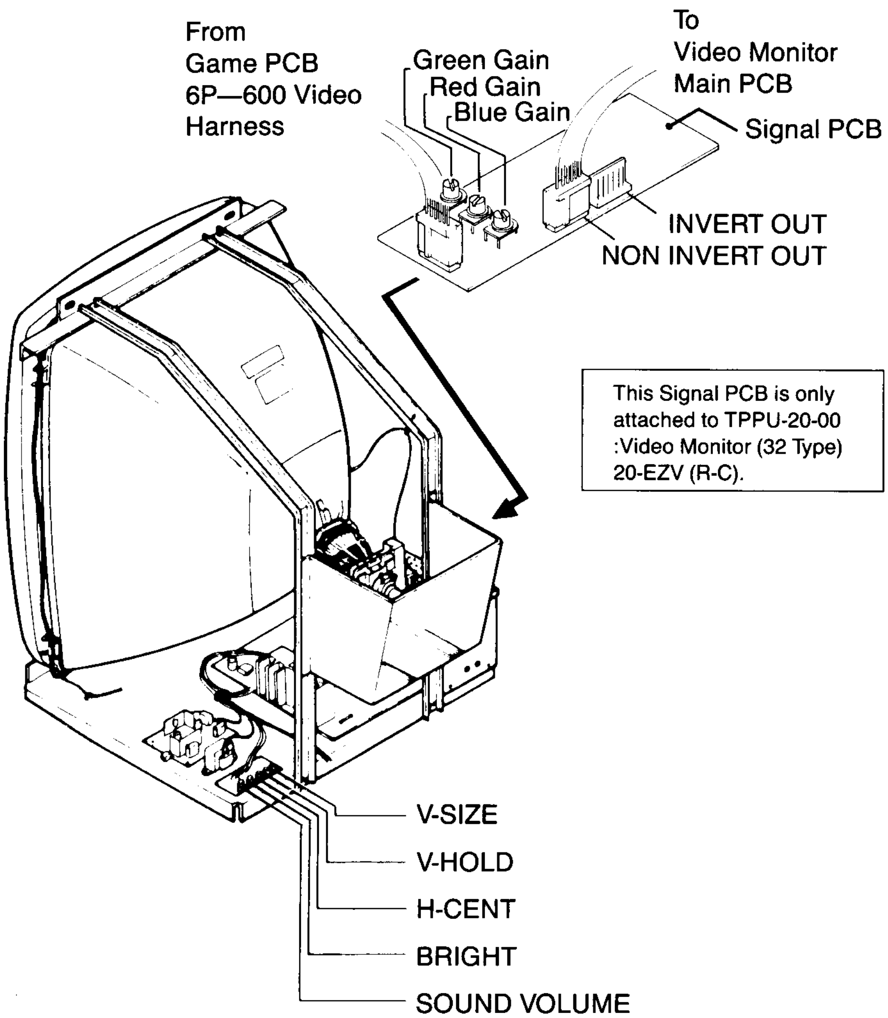
(3) If, however, color does not look correct, VR3, VR4, and VR6 may be adjusted.

# Adjustment of Horizontal Width

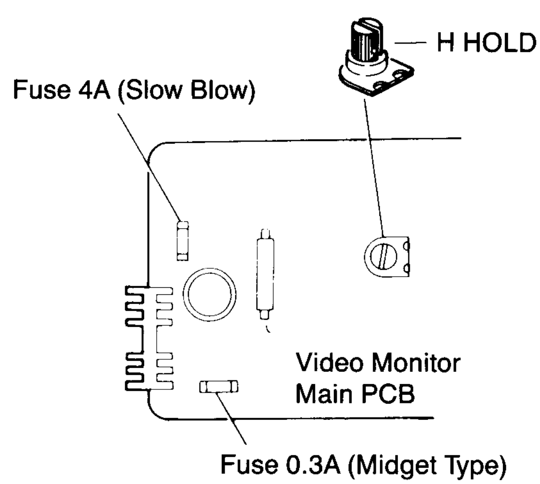
Using a standard 2.6mm hex non-conductive core alignment driver, carefully turn L453 counter-clockwise for a smaller horizontal screen size. L453 is located in the rear of the monitor just under the deflection yoke.



## Adjustment of Video Monitor




This Signal PCB is only attached to TPPU-20-00 :Video Monitor (32 Type) 20-EZV (R-C).




**WARNING**

Do not touch the inside of the Video Monitor.
It contains many parts supplied with high voltage.

Nintendo

**SERVICE DEPARTMENT**

Dear Customers:

In addition to the steps you have already done, we felt it would benefit you if the previous cabinet and coin selector problems were checked to ensure the modifications had been done. Below is the list of service bulletins which deal with these problems.

We have included copies of these service bulletins:

| | | |
|---|---|---|
| TKG-05 | Slam Switch | 4-18-82 |
| DJR-01 | Upper Coin Door Hinge | 8-24-82 |
| DJR-02 | Model 730A Coin Selector | 1-04-83 |
| DJR-05 | Video Wrap Around | 9-09-83 |

Sincerely,

Nintendo of America, Inc.

1-800-633-3236 1-206-882-2040

Nintendo®

**SERVICE DEPARTMENT**
**BULLETIN # TKG.05**

GAME: Donkey Kong, Donkey Kong Junior, Popeye, Mario Bros., Donkey Kong 3, VS System

SUBJECT: Slam Switch

In order to prevent the accumulation of free credits by kicking the coin door, a slam switch should be added.

In all cases the switch (a "normally open" weighted reed switch) should be mounted on the coin door. Connect one side of the slam switch to the brown wire on the coin switch (ground). The other side of the slam switch should be connected to a wire which will be run through the wiring harness to the CPU board. At this point the installations vary for the six (6) games.

**Donkey Kong:**

TKG2 and TKG3: Attach to Test Point 8, at board coordinates 3L.

TKG4: Attach to Test Point 2-RESET, at board coordinates 1L.

**Donkey Kong Junior:**

Attach to Test Point 2-RESET, at board coordinates 1L.

**Popeye:**

Attach to C13 (47$\mu$ F electrolytic capacitor), " + " side, at board coordinates 2N.

**Mario Bros:**

Attach to C38 (100$\mu$ F electrolytic capacitor), " + " side, at board coordinates 4F.

**Donkey Kong 3:**

Attach to C25 (100$\mu$ F electrolytic capacitor), " + " side, at board coordinates 2E.

**VS. System**

Attach to C3 (10$\mu$ electrolytic cap) " + " side, at board coordinates 1K.

**SERVICE DEPARTMENT**
**BULLETIN # DJR-01**

GAME: Donkey Kong Jr.

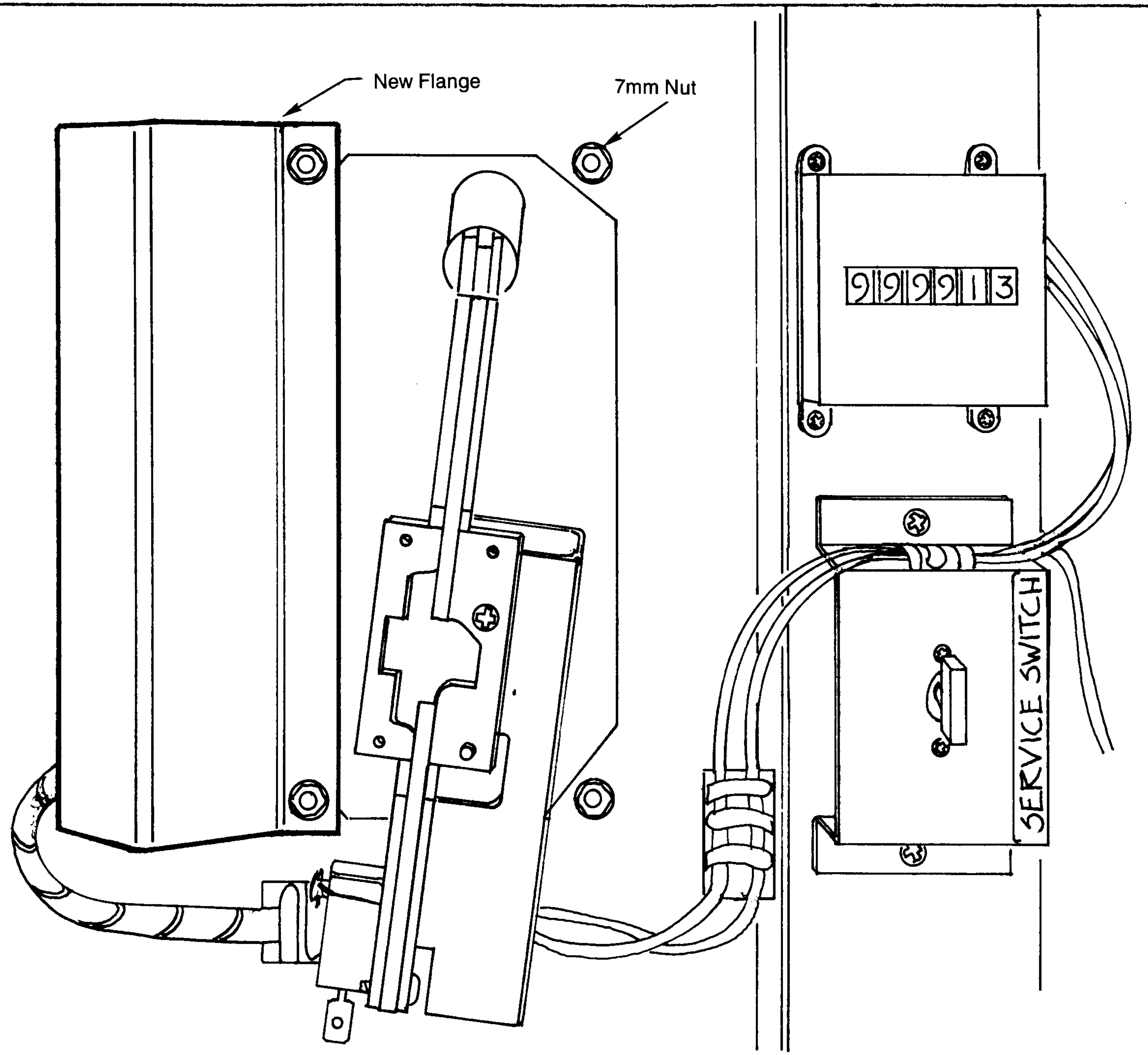
SUBJECT: Upper Coin Door Hinge

It has been brought to our attention that a flattened straw or similar object can be passed through the center opening in the upper hinge. If the object makes contact with the coin switch, it can be used to run up multiple credits.

The solution is to block the opening with a flange made of wood or metal. This flange should be mounted to the inside of the cabinet and can be obtained from us as a retrofit kit.

This problem is presented in all Radar Scope uprights, Donkey Kong uprights and early Donkey Kong Jr. uprights.

1-800-633-3236 1-206-882-2040




NOTE: Mount new flange on left coin mech using existing nuts and bolts so flange covers hinge when door is closed.

Detail Coin Mech.

## Retrofit Flange

**SERVICE DEPARTMENT**
**BULLETIN # DJR-02**

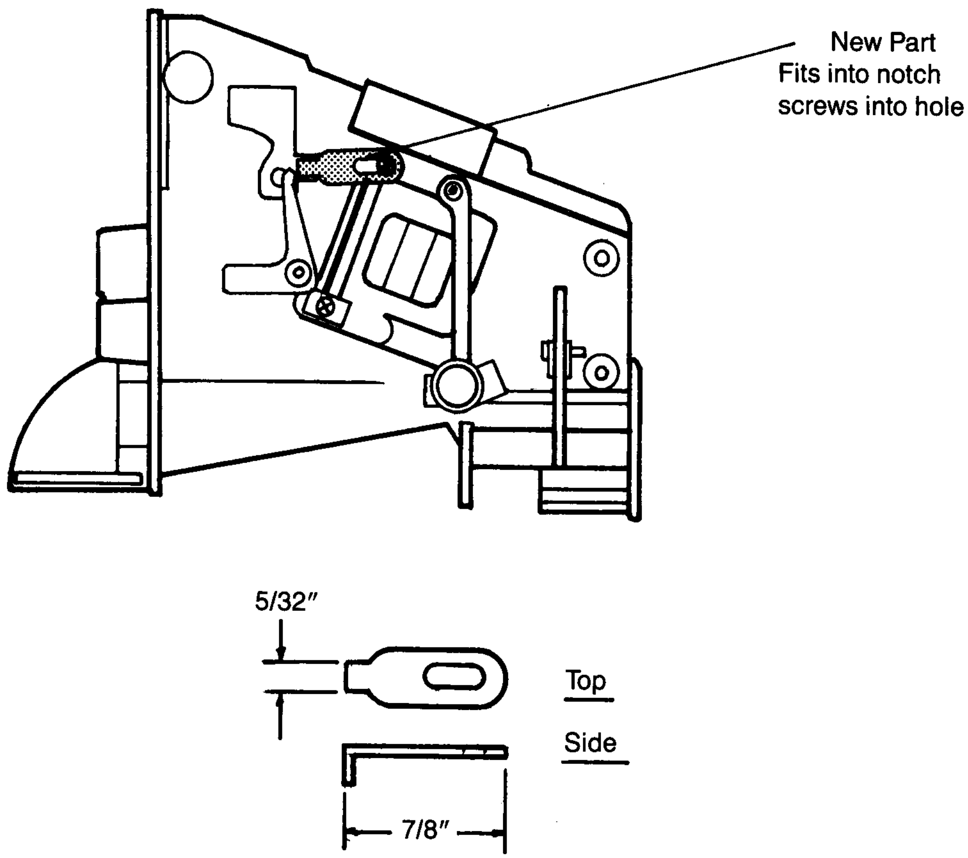
GAME: Donkey Kong Jr.

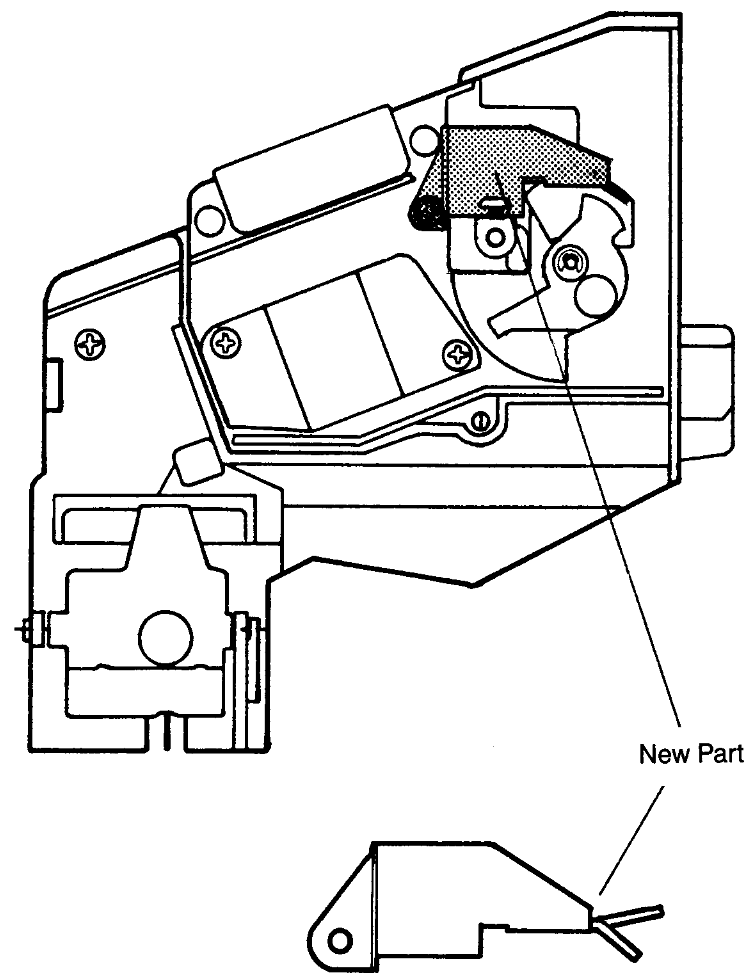
SUBJECT: Model #730A Coin Selector

It has come to our attention that there is a problem with the model #730A coin selector in that a nickel or a penny, if flipped through the entry just right, will continue through the mechanism and establish credits.

The solution to this problem is to add a small metal piece to the selector as shown in the enclosed drawing. This piece can be made from 18 gauge steel or even a paper clip as shown in the drawing. This piece is available at no charge. The threaded hole in the selector is an M3 x 6 MM size. If you cannot locate a screw this size, you can remove one of the machine screws from the power supply cage.

1-800-633-3236 1-206-882-2040


New Part
Fits into notch
screws into hole
5/32″
Top
Side
7/8″


New Part

**SERVICE DEPARTMENT**
**BULLETIN # DJR-05**

GAME: Donkey Kong, Donkey Kong Junior

SUBJECT: Video Wrap Around on Left Side of Picture

We have recently received a number of service calls concerning the wrap around or fold over of the picture on the left hand side of the monitor. In most cases the problem may be solved by replacing capacitor C407 on the main monitor PC board. This is located just to the left of the high voltage cage when viewing from the rear of the monitor. The value of this capacitor is 10 microfarads at 160 volts (of course, any capacitor of 10 microfarads with a voltage rating higher will work also).

This capacitor is connected between ground and the B+ supply for the vertical output transistors, so if this capacitor becomes leaky it does not allow full vertical deflection of the screen; consequently, you get video information imposed over the other (wrap around).

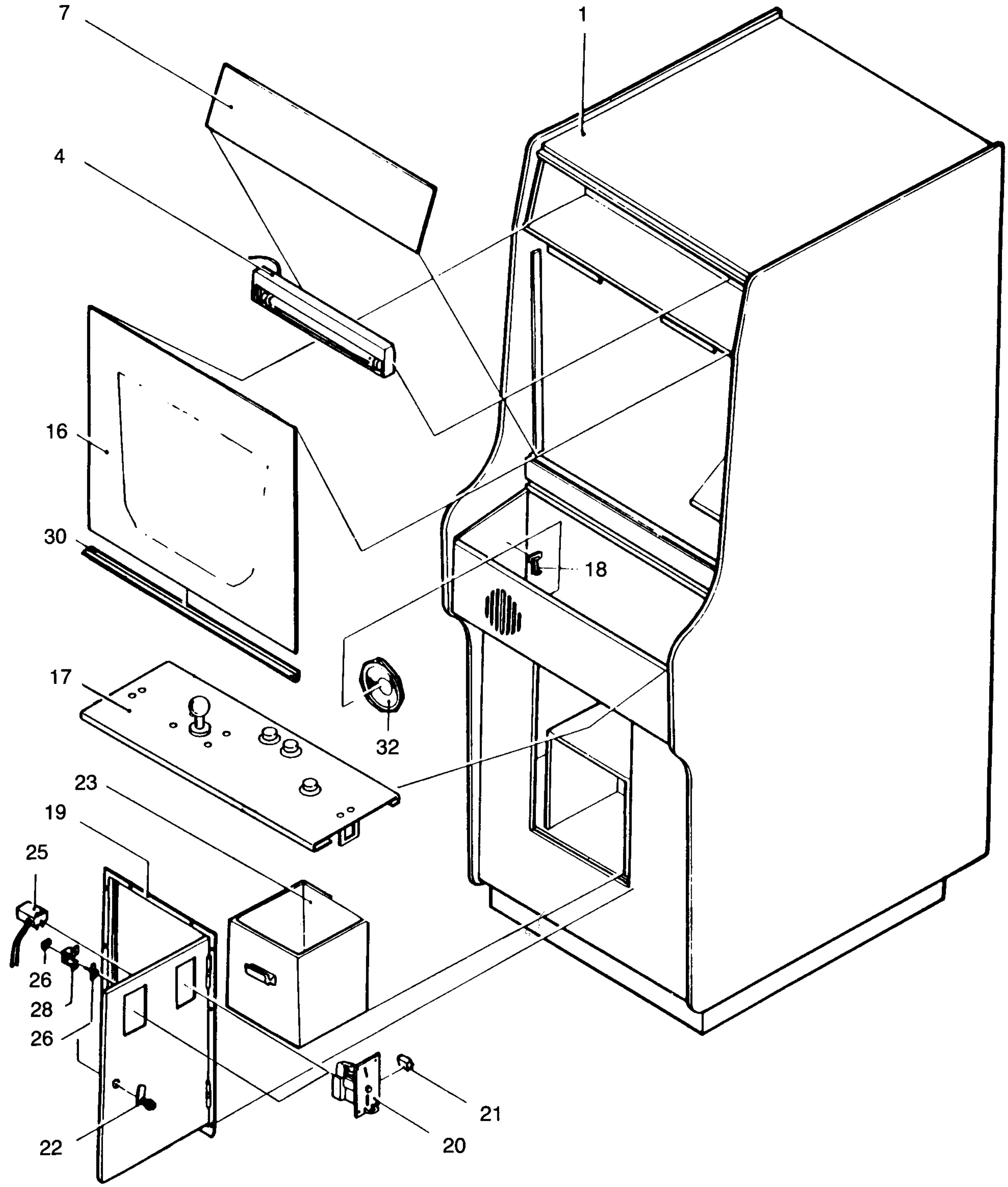
If you have questions about this or any other questions concerning Nintendo products, please feel free to contact us.

# IX. Reorder Parts List

**Body Parts — Front View (Fig. 5-1)**

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | TKGU-01-01 | Body |
| 2 | TKGU-01-69 | Center Trim |
| 3 | TKGU-01-56 | Top Trim |
| 4 | TKGU-01-29 | Fluorescent Lamp Ass'y |
| 5 | TKGU-01-29-01 | Fluorescent Lamp |
| 6 | TKGU-01-29-02 | Lamp Starter (Glow Lamp) |
| 7 | MGSU-01-24 | Name Plate Plexi |
| 8 | TKGU-01-49 | Speaker Grill |
| 9 | TPPU-01-52 | Monitor Support Bar |
| 10 | TPPU-01-50 | Monitor Mounting Brkt Left |
| 11 | TPPU-01-51 | Monitor Mounting Brkt Right |
| 12 | TKGU-20-00 | Video Monitor (20-5F) (Standard Scan) |
| 13 | TKGU-20-01 | Video Picture Tube |
| 14 | TPPU-01-68 | Blind Cardboard (Small) |
| 15 | TPPU-01-67 | Blind Cardboard (Large) |
| 16 | MGSU-01-23 | Front Screen |
| 17 | MGSU-23-60 | Operation Panel Ass'y |
| 18 | TKGU-01-31 | Draw Latch |
| 19 | TKGU-01-28 | Coin Door |
| 20 | TKGU-01-02 | Coin Selector |
| 21 | TKGU-01-02-01 | Coin Switch |
| 22 | TKGU-01-04 | Front Door Lock |
| 23 | TKGU-01-01-03 | Cash Box |
| 24 | MDSU-01-32 | CS Frame 120 W Ass'y |
| 25 | TKGU-01-11 | Game Counter |
| 26 | TKGU-01-33 | Service Switch |
| 27 | TMAU-11-20 | CS Plate 120W (Only) |
| 28 | TKGU-01-64 | Service Switch Bracket |
| 29 | TKGU-01-72 | T Molding (White) |
| 30 | TKGU-01-53 | Front Screen Frame (Lower) |
| 31 | MGSU-11-23 | Side Decal |
| 32 | TKGU-01-43 | Speaker 16cm (8 OHM) |

## Front View of Game Cabinet



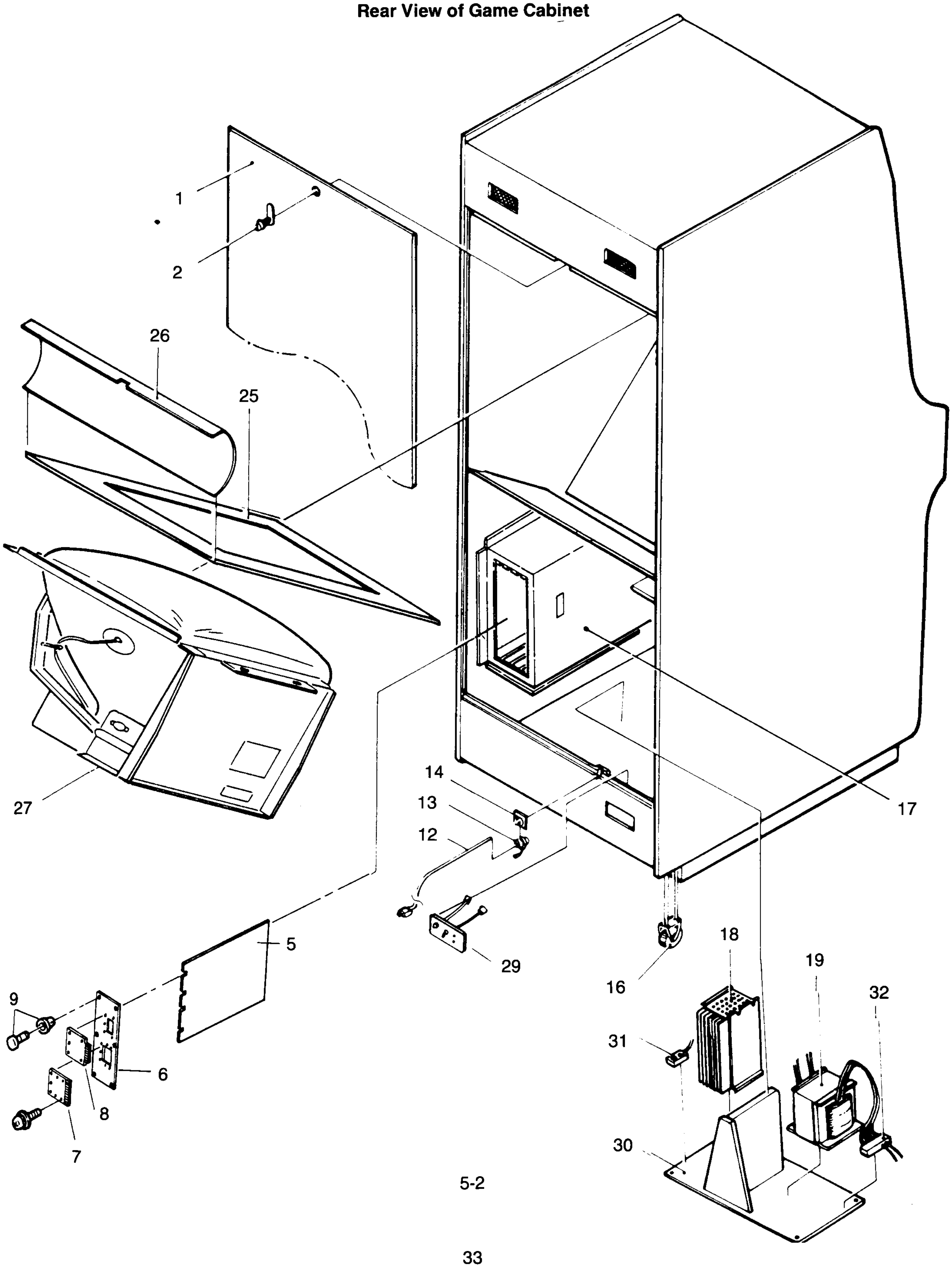

5-1

# IX. Reorder Parts List, Continued

**Body Parts — Rear View (Fig. 5-2)**

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | TKGU-01-01-05 | Back Door |
| 2 | TKGU-01-03 | Back Door Lock (Key #6510) |
| 3 | TKGU-01-03-01 | Back Door Key Only (Key #6510) |
| 4 | TKGU-01-05 | Cam A-Type (Back Door Lock) |
| 5 | MDST-21-11 | P.C. Board Ass'y |
| 6 | MDSU-01-01-11 | 062 FCC Shield Cover |
| 7 | MDSU-01-01-12 | 062 44P FCC P.C.B. Ass'y |
| 8 | MDSU-01-01-13 | 062 36P FCC P.C.B. Ass'y |
| 9 | MDSU-23-35 | Snap In Fastener |
| 10 | TPPU-01-01-14 | FCC Sponge (Black) |
| 11 | CHPU-01-01-15 | Shield Cover Label |
| 12 | TKGU-01-08 | Power Cord 5M |
| 13 | TKGU-01-10 | Strain Relief Bushing |
| 14 | TKGU-01-65 | Strain Relief Bushing Plate |
| 15 | TKGU-11-08 | Fuse 5A 125V |
| 16 | TKGU-01-30 | Caster |
| 17 | CHPU-01-01-10 | Shield Cage (054 Type) |
| 18 | TKGU-18-01 | Power Supply PP-7B |
| 19 | TKGU-09-01-01 | Power Transformer PT821B |
| 20 | TKGU-01-07 | Back Door Lock Stopper Plate |
| 21 | MGSU-11-05 | Back Door Label |
| 22 | TPPU-11-25 | FCC Label |
| 23 | TKGU-11-17 | Monitor Adjustment Label |
| 24 | MGSK-23-61 | MGSK Operation Manual |
| 25 | TPPU-01-67 | Blind Cardboard (Large) |
| 26 | TPPU-01-68 | Blind Cardboard (Small) |
| 27 | TKGU-20-00 | Video Monitor (20-EZV) (Standard Scan) |
| 28 | TKGU-20-01 | Video Picture Tube |
| 29 | TKGU-10-01 | Power On/Off Switch Ass'y (90 ~ 120v) |
| 29 | TKGU-10-01E | Power On/Off Switch Ass'y (200 ~ 240v) |
| 30 | TKGU-01-01-02 | Transformer Base |
| 31 | TKGU-09-01-02 | 100v Outlet (From Transformer) |
| 32 | TKGU-09-01-03 | Terminal Block 6-Position |
| 32 | TKGU-19-01-03 | Terminal Block 4-Position |

## Rear View of Game Cabinet

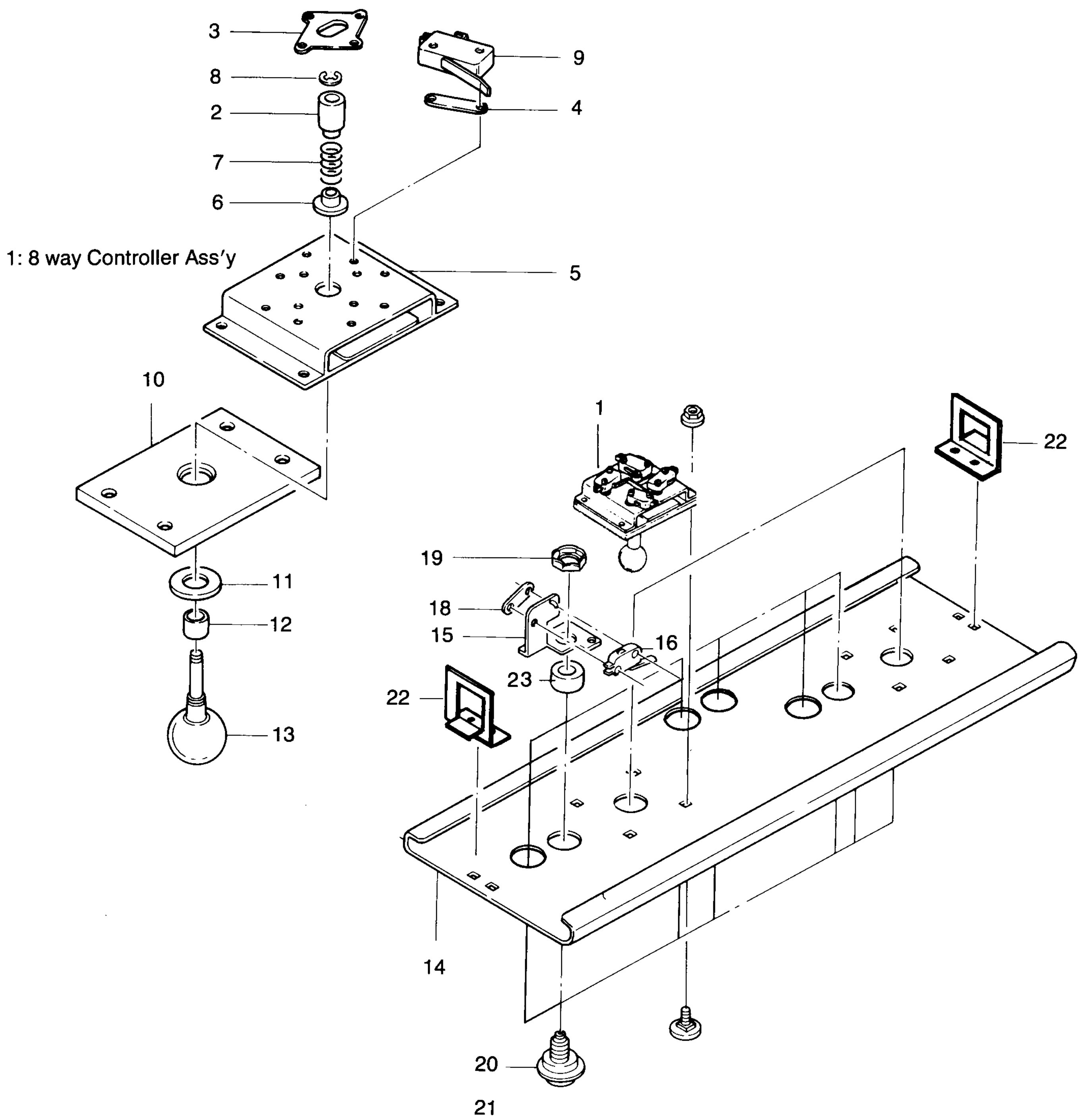



5-2

**Operation Panel Assembly (Fig. 5-3)**

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1 | MDST-14-12 | 8 Way Control Lever Assembly |
| 2 | TKGU-23-21 | Switch Collar |
| 3 | TNX-23-18 | 8 Way Guide Plate |
| 4 | TKGU-23-17 | Switch Spacer |
| 5 | TKGU-23-16 | Bearing Brkt |
| 6 | TKGU-23-20 | Spring Stopper |
| 7 | TKGU-23-22 | Lever Spring |
| 8 | TKGU-23-23 | E-Ring |
| 9 | TKGU-23-13 | Micro Switch |
| 10 | TMAU-12-15 | Lever Plate |
| 11 | TMAU-12-14 | Control Knob Plate |
| 12 | TMAU-12-16 | Control Knob Collar 8L |
| 13 | TMAU-11-18 | Knob with Shaft 80.5L |
| 14 | MGSU-01-22 | Operation Panel Base |
| 15 | TKGU-23-12 | Switch Button Bracket |
| 16 | TMAU-34-18 | Micro Switch VL 12L (Straight) |
| 17 | MDSU-12-17 | Black Sponge, 2 x 10 x 580L |
| 18 | TKGU-23-26 | Nut Plate |
| 19 | TKGU-23-34 | Pal Nut M16 |
| 20 | MDST-12-21 | Button Assembly (Black) |
| 21 | MDST-12-17 | Button Assembly (Crimson) |
| 22 | TMAK-11-19 | Operation Panel Fastener |
| 23 | TMAU-12-18 | Collar — 34 x 28 x 7H |
| 24 | MDST-12-24 | Button Assembly (Light Blue) |
| 25 | MDST-12-27 | Button Assembly (Green) |

**VS. UniSystem Operation Panel Assembly Parts (Upright)**




5-3

**Operation Panel Assembly**

## Wiring Harnesses

| PART NO. | DESCRIPTION |
|---|---|
| MDSU-41-12 | 062 44P FCC Harness |
| MDSU-41-11 | 062 36P FCC Harness |
| MGSU-41-13 | UP-072-44P Edge Harness |
| MGSU-41-14 | UP-072-36P Edge Harness |
| MGSU-42-11 | UP-072-15P Switch Harness |
| MGSU-42-12 | UP-072-12P Switch Harness |
| MGSK-43-01 | 072-6P-100 Video Harness |
| MGSK-43-02 | 072-2P-100 Audio Harness |
| MGSK-43-03 | 072-4P-100 Service Sw. Harness |
| MGSK-43-04 | 072-4P-100 Coin Sw. Harness |
| MGSK-43-05 | 072-3P-100 Counter Harness |
| MGSK-43-06 | 072-9P-250 Power Harness |
| TKGU-13-17 | 2P-860 Speaker Harness |

**MDS P.C. Board Assembly**

| PART NO. | DESCRIPTION (Reference Designations and Locations) | |
|---|---|---|
| MDST-21-11 | P.C. Board Assembly | |
| MDST-21-12 | 2A03 Microprocessor | (2J,8J) |
| MDST-21-13 | HM6116 2k x 8bit Static RAM, 250ns | (6E) |
| MDST-21-14 | MB8416-15 2k x 8bit Static CMOS RAM 150ns | (8L) |
| MDST-21-15 | TC5533P-A 4k x 8bit Static RAM | (2C) |
| MDST-21-16 | TC5533P-B 4k x 8bit Static RAM | (8C) |
| MDST-21-17 | 74LS00 Quad 2-input NAND LS TTL | (4C, 5C) |
| MDST-21-18 | 74LS04 Hex Inverters LS TTL | (1L, 2K, 4E, 5E) |
| MDST-21-19 | 74LS10 Tri 3-input NAND LS TTL | (4D) |
| MDST-21-20 | 74LS32 Hex 2-input AND LS TTL | (4A, 4B, 5A, 5B) |
| MDST-21-21 | 74LS74 Dual D-Flip Flops LS TTL | (5D) |
| MDST-21-22 | 74LS123 Dual Retriggable Single Shots LS TTL | (1J) |
| MDST-21-23 | 74LS138 Dual 2 to 4 Demultiplexers LS TTL | (1F, 6F) |
| MDST-21-24 | 74LS157 2 to 1 Data Selectors LS TTL | (5J, 5K, 6J, 6K) |
| MDST-21-25 | 74LS165 8bit Shift register LS TTL | (6M, 6N, 7P, 8P) |
| MDST-21-26 | 74LS240 Octal 3 State Bus. Inverters LS TTL | (7M, 7N, 8M, 8N) |
| MDST-21-27 | 74LS245 Octal 3 State Bus Transceivers LS TTL | (3K, 8K) |
| MDST-21-28 | 74LS373 Octal 3 State D-Latchs LS TTL | (2E, 8E) |
| MDST-21-29 | 74F04 Hex Inverters FAST TTL | (5H) |
| MDST-21-30 | 4066 Quad Analog Switches C-MOS | (2P, 4P) |
| MDST-21-31 | LM324 Hex Operational Amplifiers | (1P, 3P) |
| MDST-21-32 | LM3900 Hex Operational Amplifiers | (5N, 5R) |
| MDST-21-33 | PST518A Reset IC | (1K) |
| MDST-21-34 | 2SA933 Silicon PNP Transistor | (Q3, Q7, Q13 ~ Q16, Q19 ~ Q22, Q26, Q27) |
| MDST-21-35 | 2SC1740 Silicon NPN Transistor | (Q1, Q2, Q4 ~ Q6, Q8, Q9, Q12, Q17, Q18, Q23 ~ Q25) |
| MDST-21-36 | 2SD592 Silicon NPN Transistor | (Q10, Q11) |
| MDST-21-37 | 1S953 Silicon Switching Diode | (D1, D2, D5, D7, D9 ~ D11) |
| MDST-21-38 | W03B Silicon Diode | (D3, D4, D6, D8) |
| MDST-21-39 | 27 Ω 1/4W ± 5% Resistor | (R4) |
| MDST-21-40 | 33 Ω 1/4W ± 5% Resistor | (R22, R30, R36, R38, R45 R47, R72, R89) |
| MDST-21-41 | 100 Ω 1/4W ± 5% Resistor | (R79, R80, R95, R97) |
| MDST-21-42 | 330 Ω 1/4W ± 5% Resistor | (R8, R20, R28, R29, R48, R49, R70, R71, R73, R91) |
| MDST-21-43 | 680 Ω 1/4W ± 5% Resistor | (R119) |
| MDST-21-44 | 1K Ω 1/4W ± 5% Resistor | (R31, R32, R92, R93) |
| MDST-21-45 | 1.2K Ω 1/4W ± 5% Resistor | (R37, R43) |
| MDST-21-46 | 2.2K Ω 1/4W ± 5% Resistor | (R6, R11, R12, R14, R15, R23, R24, R27, R39 ~ R42, R50, R51, R54, R55, R64, R65, R68, R69, R81, R87) |
| MDST-21-47 | 3.3K Ω 1/4W ± 5% Resistor | (R77) |
| MDST-21-48 | 4.7K Ω 1/4W ± 5% Resistor | (R13, R17, R25, R26, R52, R53, R66, R67) |

**MDS P.C. Board Assembly (continued)**

| PART NO. | DESCRIPTION (Reference Designations and Locations) | |
|---|---|---|
| MDST-21-49 | 10K Ω 1/4W ± 5% Resistor | (R3, R5, R7, R16, R18, R19, R21, R33, R56 R63, R75, R82, R83, R85, R86, R120) |
| MDST-21-50 | 12K Ω 1/4 W ± 5% Resistor | (R76, R96, R98) |
| MDST-21-51 | 20K Ω 1/4W ± 5% Resistor | (R94, R99) |
| MDST-21-52 | 33K Ω 1/4W ± 5% Resistor | (R1, R2) |
| MDST-21-53 | 100K Ω 1/4W ± 5% Resistor | (R10, R35, R84, R103, R121) |
| MDST-21-54 | 150K Ω 1/4W ± 5% Resistor | (R74, R118) |
| MDST-21-55 | 360K Ω 1/4 W ± 5% Resistor | (R107, R114) |
| MDST-21-56 | 750K Ω 1/4W ± 5% Resistor | (R101, R108, R109, R110, R115, R116) |
| MDST-21-57 | 1M Ω 1/4W ± 5% Resistor | (R102, R106, R112, R117) |
| MDST-21-58 | 1.8M Ω 1/4W ± 5% Resistor | (R90, R105) |
| MDST-21-59 | 2.2M Ω 1/4W ± 5% Resistor | (R81, R87, R100, R104) |
| MDST-21-60 | 1K Ω x 8 Series Resistor Array | (RM1, RM2, RM5, RM8, RM11, RM14, RM17) |
| MDST-21-61 | 68 Ω x 4 Parallel Resistor Array | (RM3, RM4, RM6, RM7, RM9, RM10, RM12, RM13, RM15, RM16) |
| MDST-21-62 | 33pF 50V Ceramic Disc Capacitor | (C35, C91, C92) |
| MDST-21-63 | 68pF 50V Ceramic Disc Capacitor | (C25, C86) |
| MDST-21-64 | 100pF 50V Ceramic Disc Capacitor | (C38, C42, C43, C46) |
| MDST-21-65 | 220pF 50V Ceramic Disc Capacitor | (C26 ~ 29, C34, C45) |
| MDST-21-66 | 0.01 μ F 50V Ceramic Disc Capacitor | (C9, C10, C89, C90) |
| MDST-21-67 | 0.1 μ F 25V Ceramic Disc Capacitor | (C100 ~ C178) |
| MDST-21-68 | 0.2 μ F 12V Ceramic Disc Capacitor | (C4, C12) |
| MDST-21-69 | 0.047 μ F 50V Film Capacitor | (C37, C39, C40, C44) |
| MDST-21-70 | 3.3 μ F 16V Al. Electrolytic Capacitor | (C15 ~ C18, C31, C32) |
| MDST-21-71 | 10 μ F 16V Al. Electrolytic Capacitor | (C3, C5, C6, C11, C13, C14, C19 ~ C24, C30, C33, C36, C41, C47 ~ C85) |
| MDST-21-72 | 47 μ F 16V Al. Electrolytic Capacitor | (C2) |
| MDST-21-73 | 100 μ F 16V Al. Electrolytic Capacitor | (C1) |
| MDST-21-74 | 100 μ F 25V Al. Electrolytic Capacitor | (C8) |
| MDST-21-75 | 470 μ F 16V Al. Electrolytic Capacitor | (C7, C87, C88) |
| MDST-21-76 | 500 Ω Variable Resistor. Red Cap | (VR1, VR3) |
| MDST-21-77 | 500 Ω Variable Resistor. Green Cap | (VR2, VR4) |
| MDST-21-78 | 500 Ω Variable Resistor. Blue Cap | (VR5, VR6) |
| MDST-21-79 | 21.47727MHz Crystal | (X1) |
| MDST-21-80 | 8 position dip switch | (SW1, SW2) |
| MDST-21-81 | 28P IC socket | (1A, 1B, 1C, 1D, 2A, 6A, 6B, 6C, 6D, 8A, 8B) |
| MDST-21-82 | 40P IC socket | (2F, 2J, 8F, 8J) |
| MDST-21-83 | Type 32-4 (UM3 x 2) Battery Case | |
| MDST-21-84 | Bolt with washer M2.6 | |
| MDST-21-85 | Flat washer M2.6 | |
| MDST-21-86 | Nut Plate M2.6 | |
| MDST-21-87 | Dry Battery "AA" | |
| | T18L Beaded tie | |

**Power Supply Parts (PP7B)**

| Part No. | Description | |
|---|---|---|
| TKG-18-01 | (PP-7B) Power Supply | Complete |
| TKG-18-02 | Transistor | 2SC2555 |
| TKG-18-03 | Transistor | 2SA817 |
| TKG-18-04 | Transistor | 2SC2535 |
| TKG-18-05 | Transistor | 2SA1015 |
| TKG-18-06 | Fast Recovery Center Tap Diode | CTU-2S |
| TKG-18-07 | Shot Key Diode | CTB33S |
| TKG-18-08 | Silicon Rectifier Diode | S4VB40 4A 400VW |
| TKG-18-09 | Silicon Rectifier Diode | 1B4B41 |
| TKG-18-10 | Hybrid IC | 3D-1001 |
| TKG-18-11 | 3 Terminals Regulators | 7824 |
| TKG-18-12 | 3 Terminals Regulators | 7812 |
| TKG-18-13 | Thyristors | 5P4M |
| TKG-18-14 | Thyristors | 03P05M |
| TKG-18-15 | Diode | 1S954 |
| TKG-18-16 | Diode | 10DF-4 |
| TKG-18-17 | Photo Coupler | PC614 |
| TKG-18-18 | Zener Diode | 05Z5.6U |
| TKG-18-19 | Zener Diode | 05Z5.1L |
| TKG-18-20 | Zener Diode | 05Z5.6Z |
| TKG-18-21 | Ceramic Capacitor | DE0707B471K2K 470pF2KV |
| TKG-18-22 | Ceramic Capacitor | 0.1MF 50V |
| TKG-18-23 | Film Capacitor | MDD2J473M 0.074MF 630VW |
| TKG-18-24 | Film Capacitor | 0.01MF 50V |
| TKG-18-25 | Film Capacitor | 1000pF 50V |
| TKG-18-26 | Aluminum Electrolytic Capacitor | 1000MF 50V |
| TKG-18-27 | Aluminum Electrolytic Capacitor | 47MF 35V |
| TKG-18-28 | Aluminum Electrolytic Capacitor | 47MF 16V |
| TKG-18-29 | Aluminum Electrolytic Capacitor | 3300MF 10V |
| TKG-18-30 | Aluminum Electrolytic Capacitor | 100MF 25V |
| TKG-18-31 | Aluminum Electrolytic Capacitor | 10MF 16V |
| TKG-18-32 | Aluminum Electrolytic Capacitor | 330MF 200V |
| TKG-18-33 | Aluminum Electrolytic Capacitor | 1000MF 25V |
| TKG-18-34 | Resistor (Coil Winding) | 20 OHM 2W |
| TKG-18-35 | Resistor (Carbon) | 1K OHM 1/4W ± 5% |
| TKG-18-36 | Resistor (Carbon) | 51 OHM 1/4W ± 5% |
| TKG-18-37 | Resistor (Carbon) | 12 OHM 1/2W ± 5% |
| TKG-18-38 | Resistor (Carbon) | 470 OHM 1/4W ± 5% |
| TKG-18-39 | Resistor (Carbon) | 22 OHM 1/2W ± 5% |
| TKG-18-40 | Resistor (Carbon) | 20K OHM 1/2W ± 5% |

**Power Supply Parts (PP7B), continued**

| Part No. | Description | |
|---|---|---|
| TKG-18-41 | Resistor (Carbon) | 100 OHM 1/2W |
| TKG-18-42 | Resistor (Cement) | 20 OHM 5W |
| TKG-18-43 | Resistor (Metal Oxide) | 510 OHM 3W |
| TKG-18-44 | Variable Resistor | 50K OHM GF06P |
| TKG-18-45 | Variable Resistor | 2K OHM GF06P |
| TKG-18-46 | Shunt Resistor | 5m OHM |
| TKG-18-47 | SC Coil | SC-02 |
| TKG-18-48 | SF Coil | 100MH 5A |
| TKG-18-49 | SF Coil | 800MH 2A |
| TKG-18-50 | Oscillator Transformer | EC-35 Type 3D-0097 |
| TKG-18-51 | Oscillator Transformer | EI-30 Type 3D-0097 |
| TKG-18-52 | Oscillator Transformer | EE-16 Type 3D-1000 |
| TKG-18-53 | Fuse Element | FGMB 4A 125V NR Type |

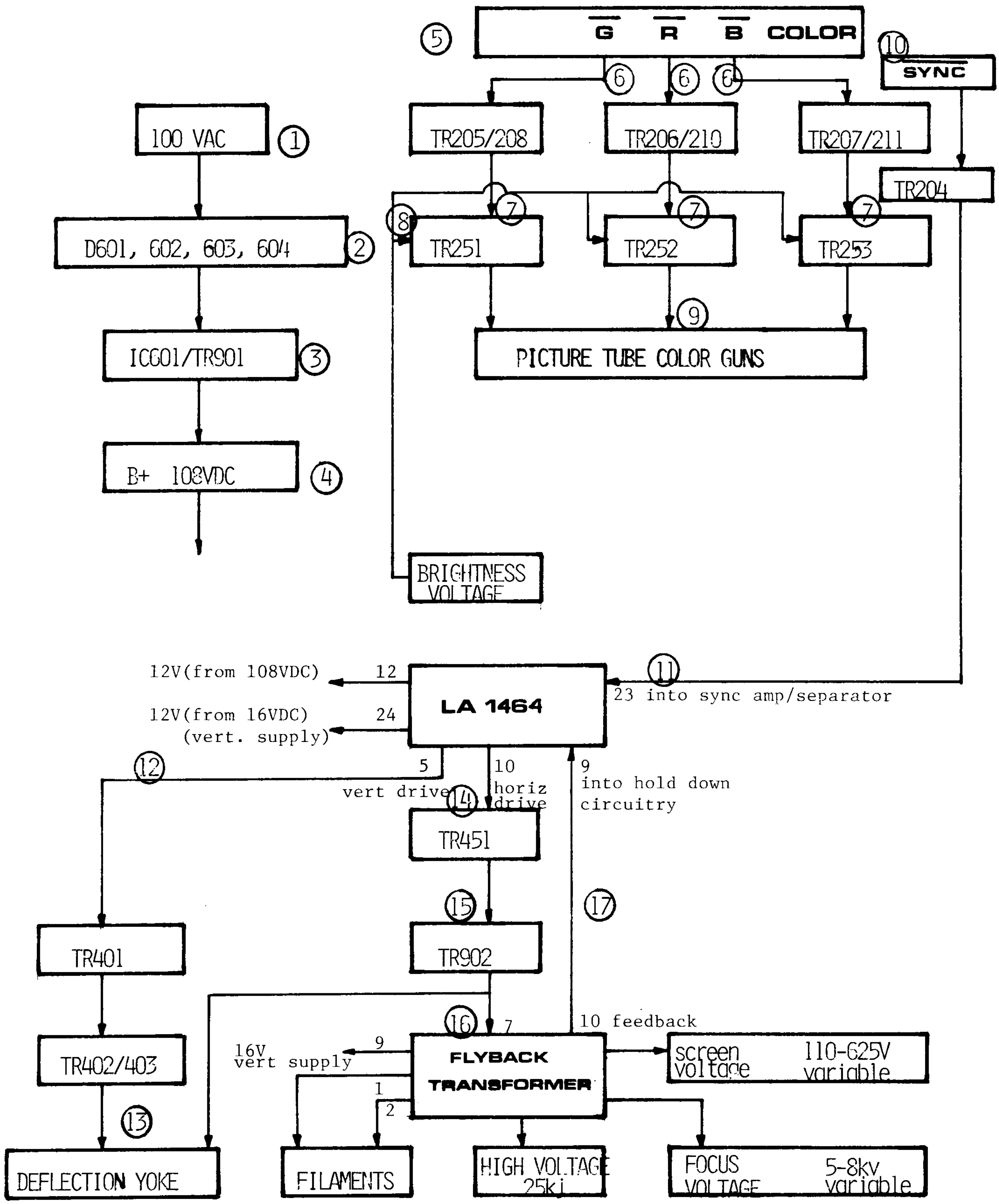
## MONITOR PARTS (20-EZV)

| PART # | DESCRIPTION |
|---|---|
| MON-01-01 | IC LA1464 |
| MON-01-03 | IC LA5112 |
| MON-02-01 | DIODE 1S1555 |
| MON-02-02 | DIODE 1S1553 |
| MON-02-03 | DIODE EU-1 |
| MON-02-04 | DIODE RU2 |
| MON-02-05 | DIODE SIB01-02 |
| MON-02-06 | DIODE ERC04-06 |
| MON-02-07 | DIODE 1S188TV |
| MON-02-50 | ZENER DIODE EQA01-35 |
| MON-02-51 | ZENER DIODE EQA01-07 |
| MON-02-52 | ZENER DIODE EQA01-12 |
| MON-02-53 | ZENER DIODE HZ7 |
| MON-03-01 | TRANSISTOR 2SA673(A) |
| MON-03-02 | TRANSISTOR 2SA940 |
| MON-03-03 | TRANSISTOR 2SA659 |
| MON-03-51 | TRANSISTOR 2SC536 |
| MON-03-52 | TRANSISTOR 2SC2551 |
| MON-03-53 | TRANSISTOR 2SC1015 |
| MON-03-54 | TRANSISTOR 2SC1051 |
| MON-03-55 | TRANSISTOR 2SC1507 |
| MON-03-56 | TRANSISTOR 2SC2073 |
| MON-03-57 | TRANSISTOR 2SC2228 |
| MON-03-58 | TRANSISTOR 2SC2271 |
| MON-03-76 | TRANSISTOR 2SD386-AY |
| MON-03-77 | TRANSISTOR 2SD870 |
| MON-03-78 | TRANSISTOR 2SD1090 |
| MON-03-79 | TRANSISTOR 2SD901 |
| MON-03-80 | TRANSISTOR 2SD869 |
| MON-05-01 | FUSE RESISTOR 1W 39 OHM |
| MON-05-02 | FUSE RESISTOR 2W 330 OHM |
| MON-05-03 | FUSE RESISTOR 1/2W 1 KOHM |
| MON-05-04 | FUSE RESISTOR 1W 3.3 OHM |
| MON-05-08 | 3 KOHM VARIABLE RESISTOR |
| MON-05-10 | 10 KOHM VARIABLE RESISTOR |
| MON-05-12 | 50 KOHM VARIABLE RESISTOR |
| MON-05-14 | 200 KOHM VARIABLE RESISTOR |
| MON-05-16 | 450 OHM VARIABLE RESISTOR |
| MON-05-18 | 300 OHM VARIABLE RESISTOR |
| MON-06-01 | TRANSFORMER A7007 |
| MON-06-02 | LINEARITY COIL (A0285) |
| MON-06-04 | WIDTH COIL (A7018) |
| MON-06-05 | FILTER COIL (L7133) |
| MON-06-06 | LINE FILTER (L019D) |
| MON-06-21 | FLYBACK TRANSFORMER F5024 |
| MON-06-50 | YOKE COIL (20-5F TYPE) |
| MON-06-60 | PURITY MAGNET ASSY (20-5F) |
| MON-07-01 | FUSE 4A |
| MON-07-02 | FUSE 0.3A |
| MON-08-01 | THERMIST SDT-500 |
| MON-08-02 | THERMIST SDT-1000 |
| MON-08-50 | POSISTOR PTH451C05 |
| MON-09-00 | CERAMIC CAPACITOR 5PF 50V |
| MON-09-02 | CERAMIC CAPACITOR 470PF 500V |
| MON-09-04 | CERAMIC CAPACITOR 4700 PF 500V |

## MONITOR PARTS (20-EZV), CONTINUED

| PART # | DESCRIPTION |
|---|---|
| MON-09-06 | CERAMIC CAPACITOR 820PF 500V |
| MON-09-08 | CERAMIC CAPACITOR 1000 PF 1000V |
| MON-09-10 | CERAMIC CAPACITOR 200PF 2000V |
| MON-09-12 | CERAMIC CAPACITOR 500PF 2000V |
| MON-09-50 | ELECTRO CAPACITOR 47MF 10V |
| MON-09-52 | ELECTRO CAPACITOR 470MF 10V |
| MON-09-54 | ELECTRO CAPACITOR 100MF 16V |
| MON-09-56 | ELECTRO CAPACITOR 220MF 16V |
| MON-09-58 | ELECTRO CAPACITOR 4.7MF 25V |
| MON-09-60 | ELECTRO CAPACITOR 220MF 25V |
| MON-09-62 | ELECTRO CAPACITOR 330MF 25V |
| MON-09-64 | ELECTRO CAPACITOR 1MF 160V |
| MON-09-66 | ELECTRO CAPACITOR 10MF 160V |
| MON-09-68 | ELECTRO CAPACITOR 100MF 160V |
| MON-09-70 | ELECTRO CAPACITOR 470MF 160V |
| MON-10-00 | MYLAR CAPACITOR 0.047MF 100V |
| MON-10-02 | MYLAR CAPACITOR 0.082MF 50V |
| MON-10-04 | MYLAR CAPACITOR 2700PF 50V |
| MON-10-06 | MYLAR CAPACITOR 0.33MF 50V |
| MON-10-08 | MYLAR CAPACITOR 0.1MF 50V |
| MON-10-10 | MYLAR CAPACITOR 8200PF 50V |
| MON-10-12 | MYLAR CAPACITOR 0.015MF 50V |
| MON-10-14 | MYLAR CAPACITOR 0.056MF 50V |
| MON-10-16 | MYLAR CAPACITOR 0.068MF 50V |
| MON-10-30 | POLYPRO CAPACITOR 0.056MF 160V |
| MON-10-32 | POLYPRO CAPACITOR 0.47MF 200V |
| MON-10-34 | POLYPRO CAPACITOR 0.022MF 200V |
| MON-10-36 | POLYPRO CAPACITOR 2200PF 630V |
| MON-10-38 | POLYPRO CAPACITOR 6800PF 2000V |
| MON-11-00 | SOLID RESISTOR 1/2W 1.8 KOHM |
| MON-11-30 | CARBON RESISTOR 1.2W 100 OHM |
| MON-11-32 | CARBON RESISTOR 1/2W 1 KOHM |
| MON-11-34 | CARBON RESISTOR 1/2W 10 KOHM |
| MON-11-36 | CARBON RESISTOR 1/2W 120 OHM |
| MON-11-38 | CARBON RESISTOR 1/2W 18 OHM |
| MON-11-40 | CARBON RESISTOR 1/2W 39 KOHM |
| MON-12-00 | WIRE WD RESISTOR 20W 180 OHM |
| MON-12-02 | WIRE WD RESISTOR 7W 470 OHM |
| MON-12-04 | WIRE WD RESISTOR 7W 1.5 OHM |
| MON-12-30 | OXIDE M RESISTOR 1W 1 KOHM |
| MON-12-32 | OXIDE M RESISTOR 1W 18 KOHM |
| MON-12-34 | OXIDE M RESISTOR 1W 330 OHM |
| MON-12-36 | OXIDE M RESISTOR 1W 8.2 KOHM |
| MON-12-38 | OXIDE M RESISTOR 2W 10 KOHM |
| MON-12-40 | OXIDE M RESISTOR 2W 5.6 KOHM |
| MON-12-42 | OXIDE M RESISTOR 3W 1.2 KOHM |
| TKGU-20-01 | VIDEO PICTURE TUBE (510UTB22) |
| TKGU-20-02 | MONITOR MAIN PCB (W/COMPONENTS) |
| TKGU-20-03 | MONITOR AUDIO PCB (W/COMPONENTS) |
| TKGU-20-04 | MONITOR CRT PCB (W/COMPONENTS) |
| TKGU-20-07 | MONITOR INVERTER PCB (W/COMPONENTS) |

PRINTED IN U.S.A.



G R B COLOR
SYNC
100 VAC
D601, 602, 603, 604
IC601/TR901
B+ 108VDC
TR205/208
TR206/210
TR207/211
TR204
TR251
TR252
TR253
PICTURE TUBE COLOR GUNS
BRIGHTNESS VOLTAGE
LA 1464
12V(from 108VDC) 12
12V(from 16VDC) (vert. supply) 24
23 into sync amp/separator
5 vert drive
10 horiz drive
9 into hold down circuitry
TR451
TR902
TR401
TR402/403
FLYBACK TRANSFORMER
10 feedback
16V vert supply
screen voltage 110-625V variable
DEFLECTION YOKE
FILAMENTS
HIGH VOLTAGE 25kj
FOCUS VOLTAGE 5-8kv variable

## Description of Video Monitor Block Diagram

1. 100VAC is applied
2. Rectified by D601, 602, 603, 604
3. IC601/TR901 form regulator for B+
4. B+ is distributed

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5. G, R, B color signals applied
6. Amplified by the respective transistors
7. Amplified again at neck board
8. Bias provided by brightness voltage
9. Applied to picture tube guns

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10. Sync is applied, buffered by TR204
11. Apply sync to 1464 sync amp & seperator

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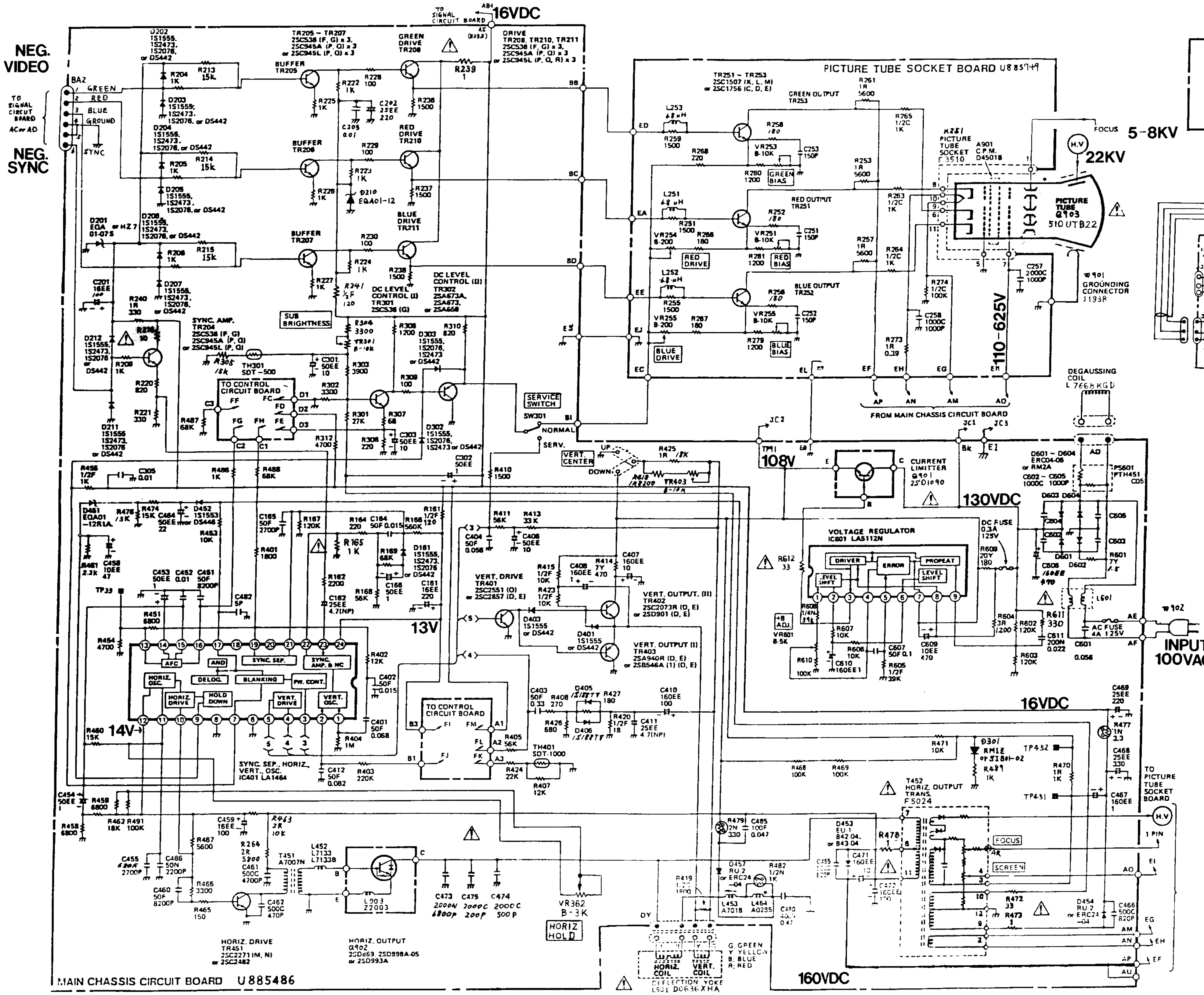
12. Vertical pulse out of pin 5 is amplified by TR401, then by TR402/403
13. Vertical pulse applied to deflection yoke

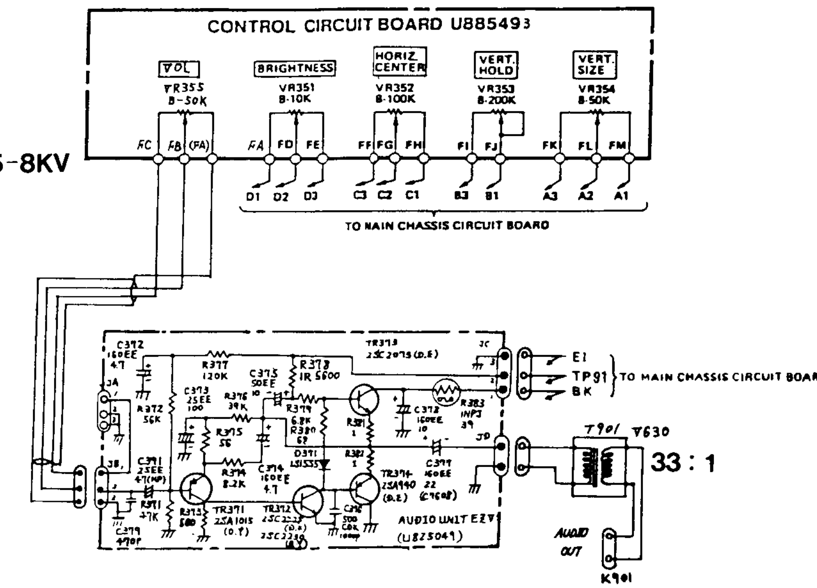
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14. Horizontal drive pulse out of pin 10 is amplified by TR451
15. Amplified again by TR902 (horizontal output)
16. Applied to flyback transformer which distributes voltages

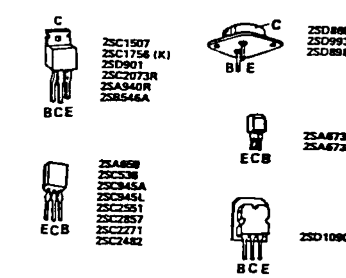
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17. Feedback from flyback monitors pin 7 pulse and will apply hold-down pulse to pin 9 of 1464 should over voltage exist




1. TRANSISTOR BASE INFORMATION.




2. RESISTOR, CAPACITOR: INFORMATION.

- RESISTOR — INFORMATION.

1 F 10K
- 10K — RESISTOR VALUE IN Ω.
- F — TYPE.
- 1 — POWER RATING.

AS TO 1/4W F-TYPE RESISTORS, RESISTANCE VALUES ALONE ARE GIVEN.

- CAPACITOR — INFORMATION

500 C 100P
- 100P — EXPRESSED IN P WHEN THE UNIT IS PF. OTHERWISE OMITTED.
- C — TYPE
- 500 — RATING VOLTAGE (THE UNIT "V" OR "WV" IS OMITTED.)

AS TO "50V, C-TYPE" CAPACITORS VALUE IS ONLY GIVEN.

3. THIS BEING A FUNDAMENTAL SCHEMATIC THERE WILL BE SOME CASES THAT THE REAL CIRCUIT DOES NOT COINCIDE WITH THIS.

RESISTOR TYPE

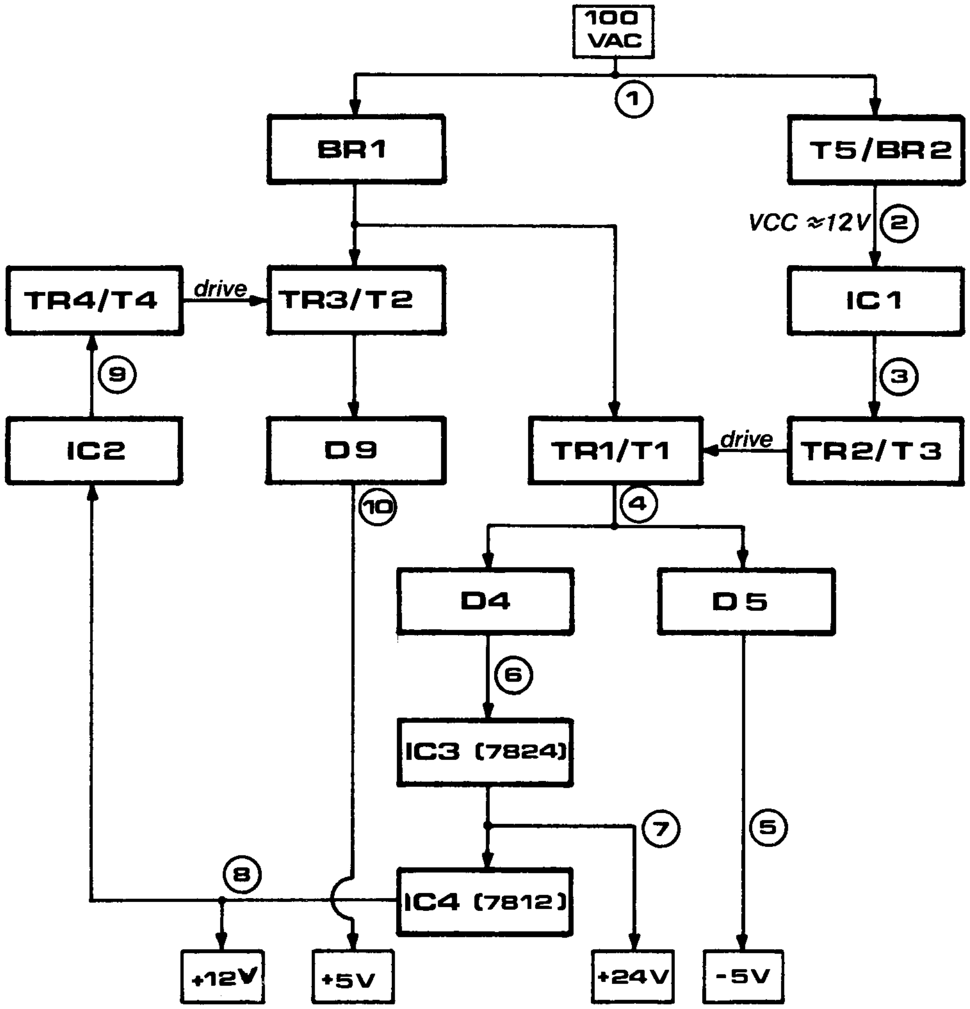
- F; INSULATED FIXED CARBON FILM RESISTOR.
- N; INSULATED METAL FILM FIXED RESISTOR.
- R; INSULATED FIXED METAL OXIDE FILM RESISTOR.
- Y; INSULATED WIRE WOUND FIXED RESISTOR.
- C; FIXED CARBON COMPOSITION RESISTOR.

CAPACITOR TYPE

- C : FIXED CERAMIC CAPACITOR.
- EE : RADIAL TYPE ALUMINUM ELECTROLYTIC CAPACITOR.
- F : POLYESTER FILM CAPACITOR.
- N : POLYPROPYLENE FILM CAPACITOR.
- (NP): NON-POLAR ALUMINUM ELECTROLYTIC CAPACITOR.

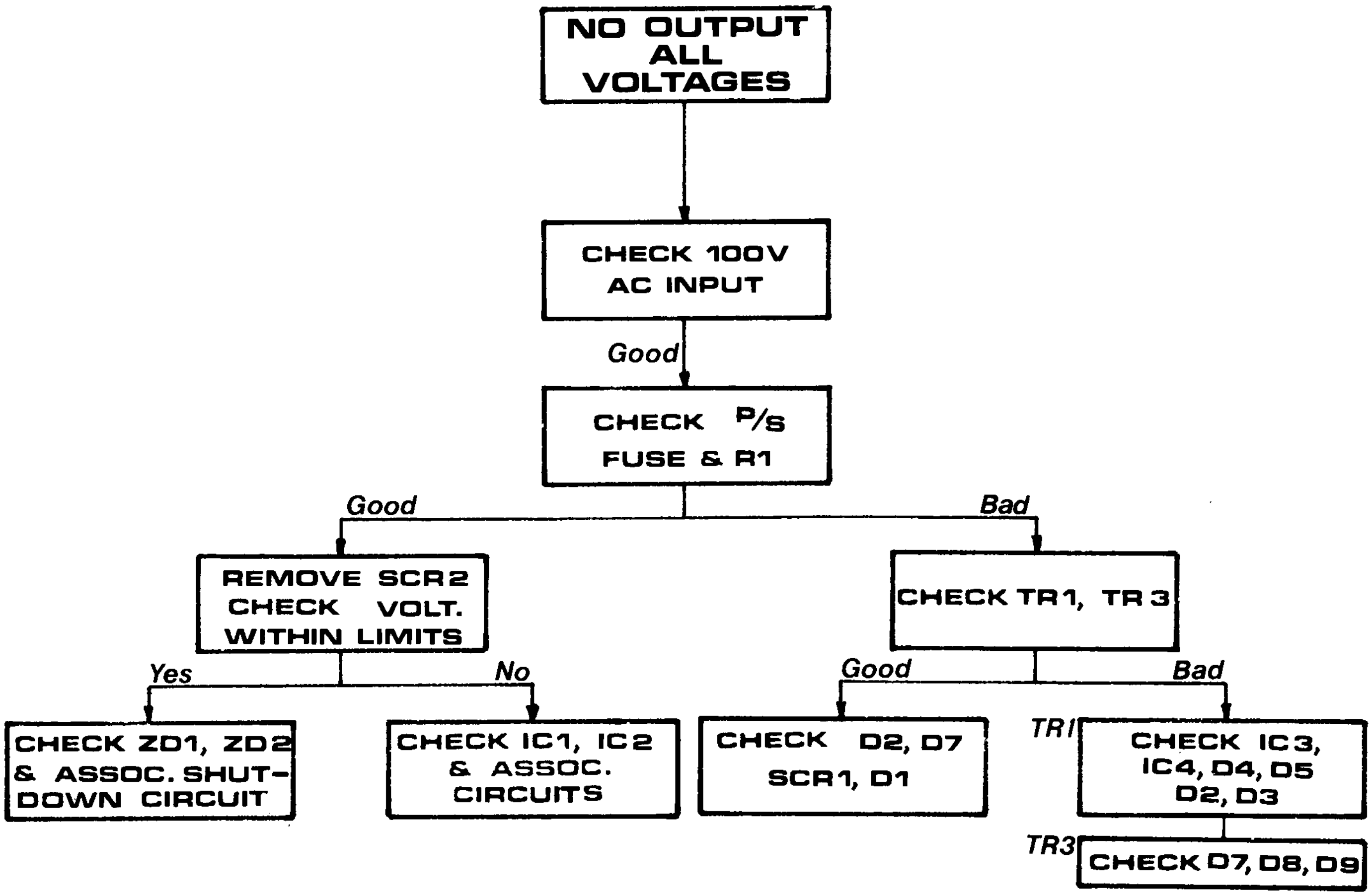
## 20-EZV(R-C) SCHEMATIC

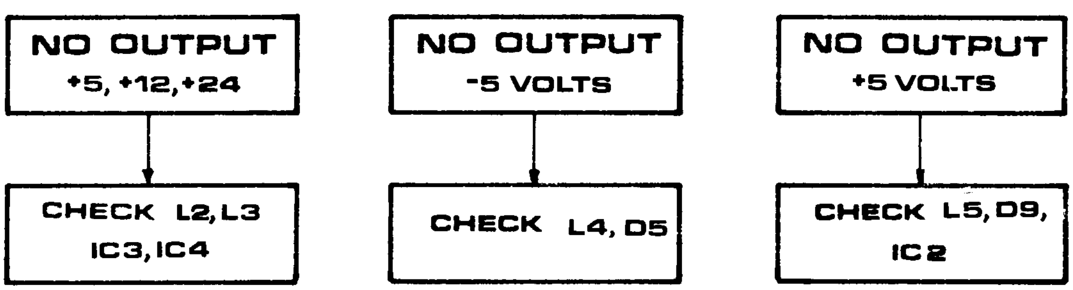
# SWITCHING POWER SUPPLY
## Block Diagram



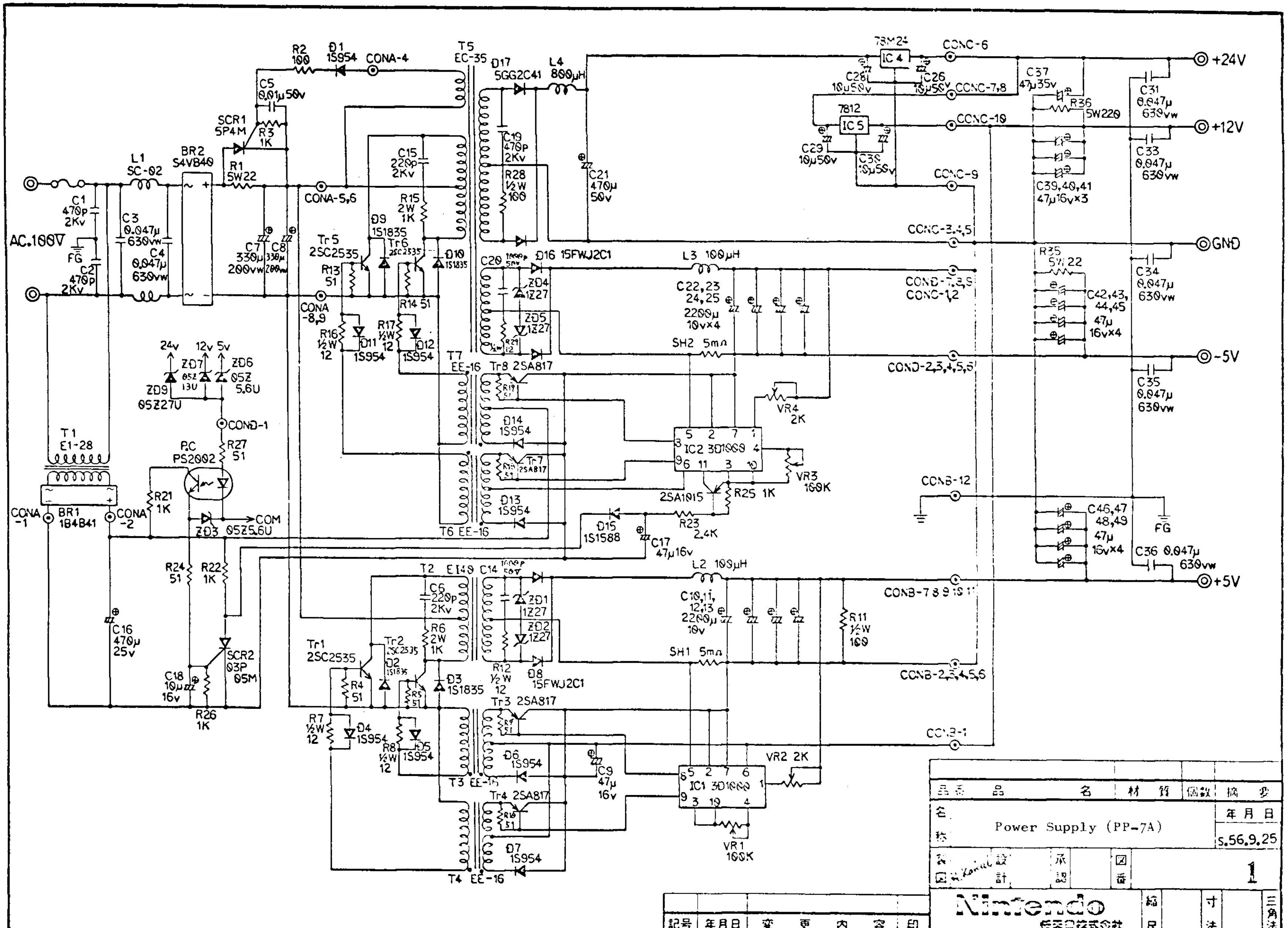

1. 100VAC is stepped down and rectified
2. VCC (12VDC) is applied to IC1; starts switching
3. IC1 switching drives TR2/T3, which in turn drives TR1/
4. Secondary of T1 output is rectified by D4 & D5
5. After filtering, D5 output is -5V
6. D4 output supplies 3 terminal regulator 7824
7. 7824 output is +24V; also drives 3 terminal regulator 7812
8. 7812 output is +12V; also VCC for IC2
9. IC2 switching drives TR4/T4; which in turn drives TR3/T2
10. D9 rectifies T2 output which becomes +5V

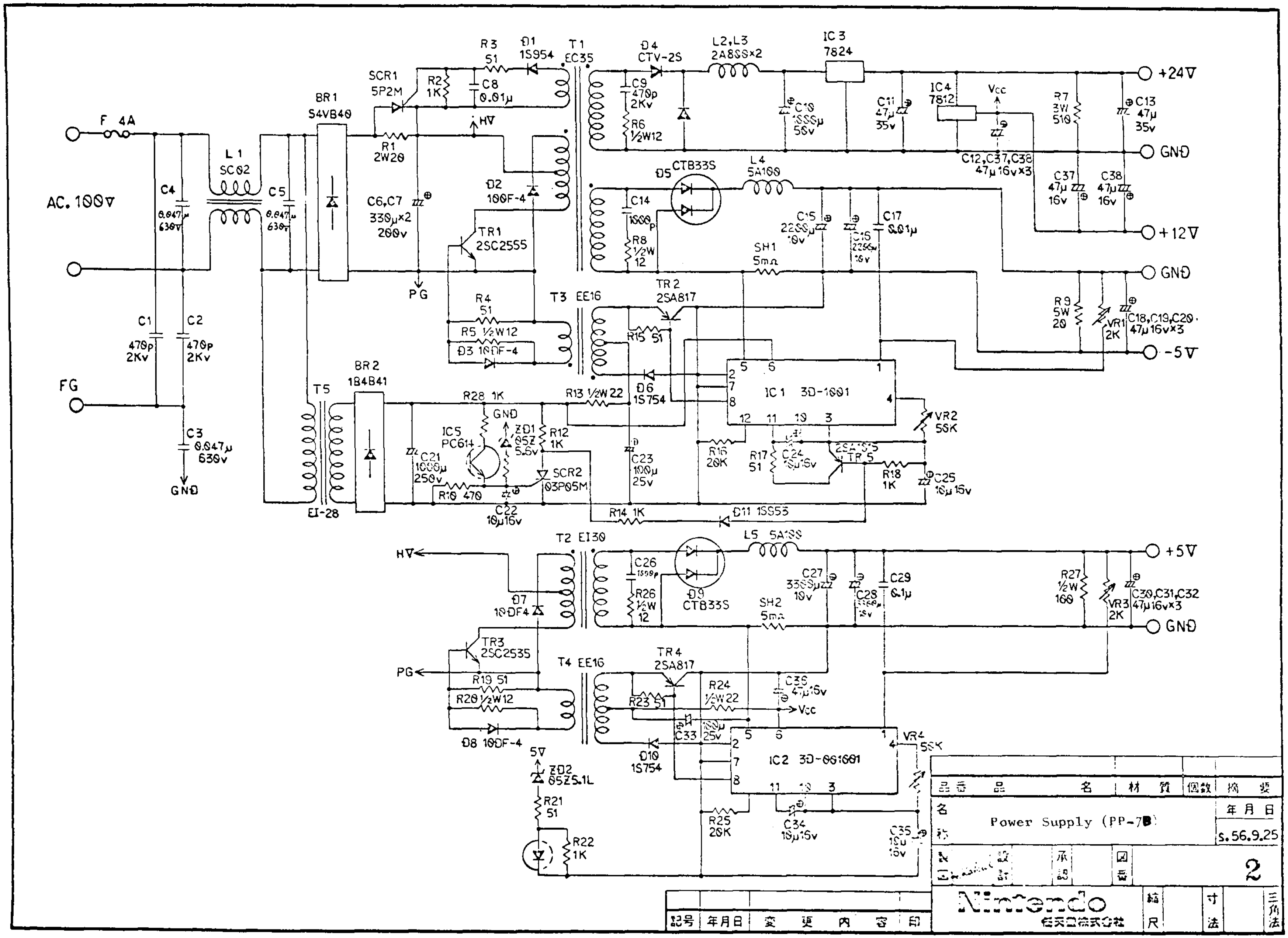
# Trouble Shooting chart for PP-7B

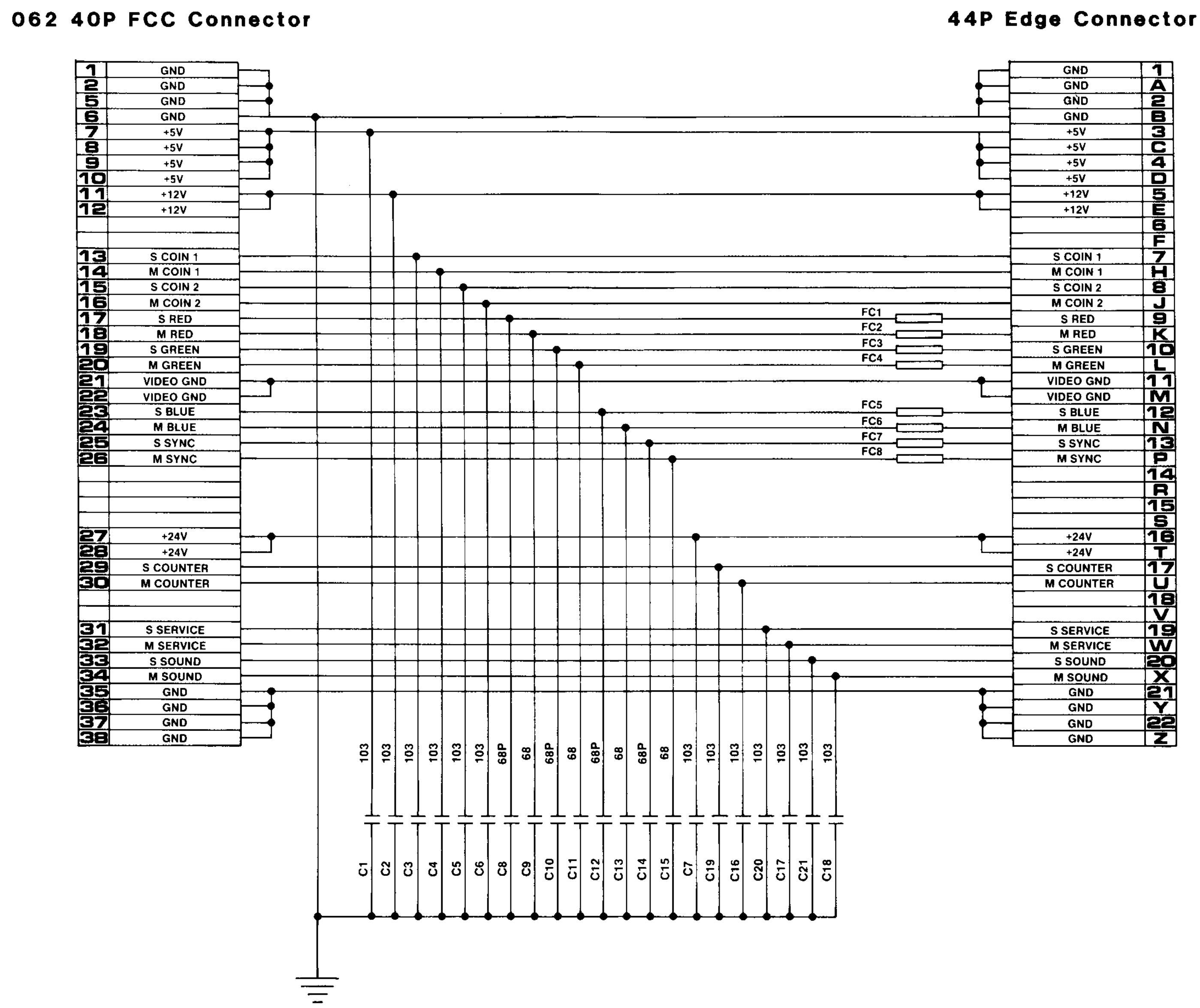


# POWER SUPPLY SCHEMATICS




AC. 100V
F 4A
FG
GND
C1 470p 2Kv
C2 470p 2Kv
C3 0.047μ 630v
C4 0.047μ 630v
C5 0.047μ 630v
L1 SC02
BR1 S4VB40
BR2 1B4B41
T5 EI-28
SCR1 5P2M
R1 2W20
R2 1K
R3 51
C8 0.01μ
D1 1S954
D2 10DF-4
C6,C7 330μ×2 200v
TR1 2SC2555
PG
HV
R4 51
R5 ½W12
D3 10DF-4
T1 EC35
T3 EE16
D4 CTV-2S
L2,L3 2A800×2
IC3 7824
IC4 7812
Vcc
C9 470p 2Kv
R6 ½W12
C10 1000μ 50v
C11 47μ 35v
C12,C37,C38 47μ 16v×3
R7 3W 510
C13 47μ 35v
+24V
+12V
-5V
+5V
D5 CTB33S
L4 5A100
C14 1000p
R8 ½W 12
C15 2200μ 10v
C16
C17 0.01μ
SH1 5mΩ
C37 47μ 16v
C38 47μ 16v
TR2 2SA817
R15 51
D6 1S754
IC1 3D-1001
R9 5W 20
VR1 2K
C18,C19,C20 47μ 16v×3
VR2 50K
R28 1K
IC5 PC614
ZD1 05Z 5.6v
R12 1K
R13 ½W 22
SCR2 03P05M
C21 1000μ 250v
R10 470
C22 10μ 16v
C23 100μ 25v
R16 20K
R17 51
C24 10μ 16v
TR5
R18 1K
C25 10μ 15v
R14 1K
D11 1SS53
T2 EI30
C26
R26 ½W 12
D9 CTB33S
L5 5A100
SH2 5mΩ
C27 3300μ 10v
C28
C29 0.1μ
R27 ½W 100
VR3 2K
C30,C31,C32 47μ 16v×3
D7 10DF4
TR3 2SC2535
R19 51
R20 ½W12
D8 10DF-4
T4 EE16
TR4 2SA817
R23 51
R24 ½W 22
C39 47μ 16v
C33 100μ 25v
D10 1S754
IC2 3D-001001
VR4 50K
5V
ZD2 05Z5.1L
R21 51
R22 1K
R25 20K
C34 10μ 16v
C35
品番 品名 材質 個数 摘要
名称 Power Supply (PP-7B)
年月日 S.56.9.25
設計 承認 図番
2
Nintendo
任天堂株式会社
縮尺 寸法 三角法
記号 年月日 変更内容 印




# SCHEMATIC

SCALE:

APPROVED BY:

DRAWN BY: M. ISHIZUKA

DATE: 3 / 10 / 84

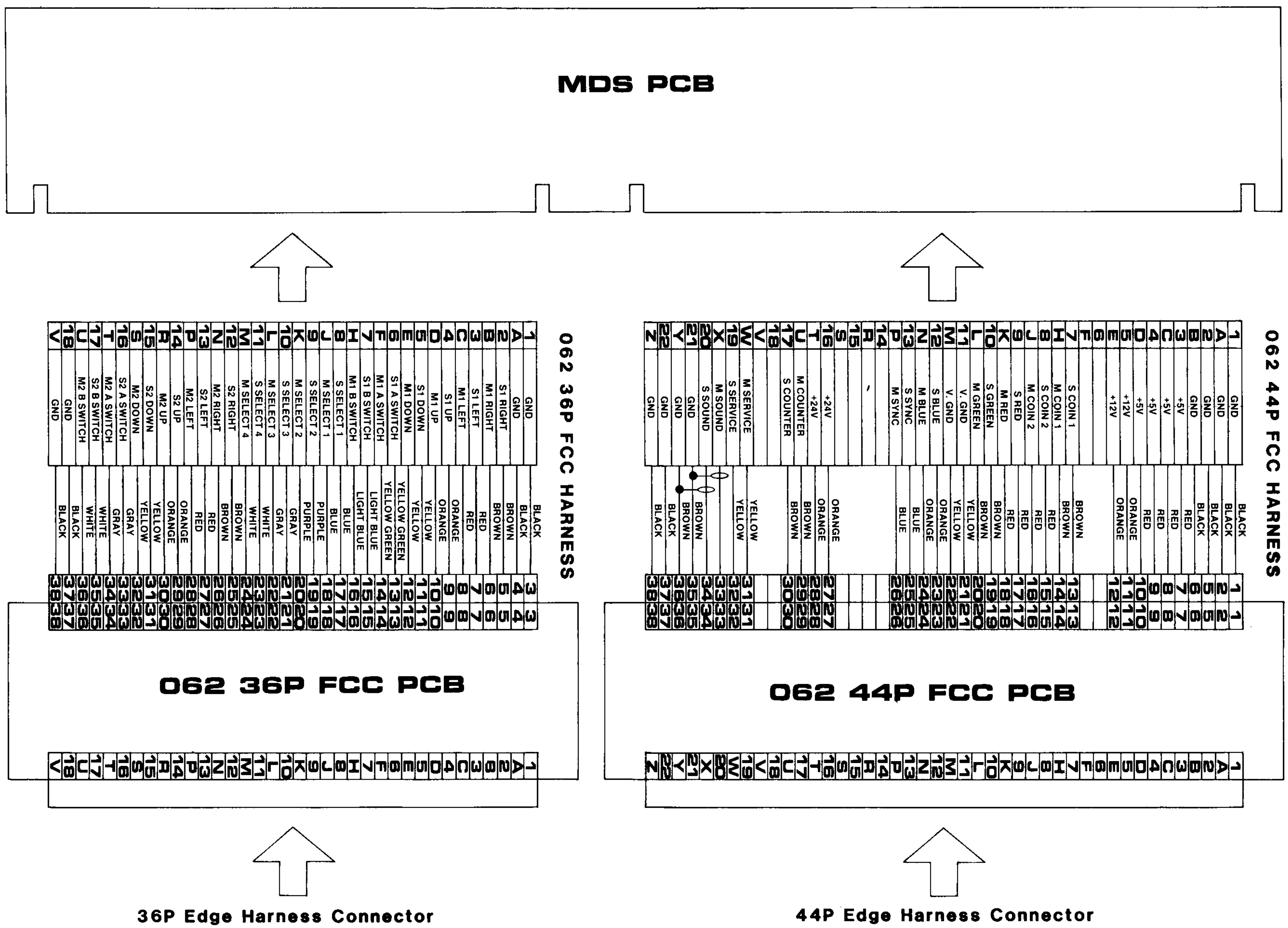
REVISED

## 062 44P FCC PC Board

Nintendo of America Inc

DRAWING NUMBER

18124 PRINTED ON NO. 1000H CLEARPRINT

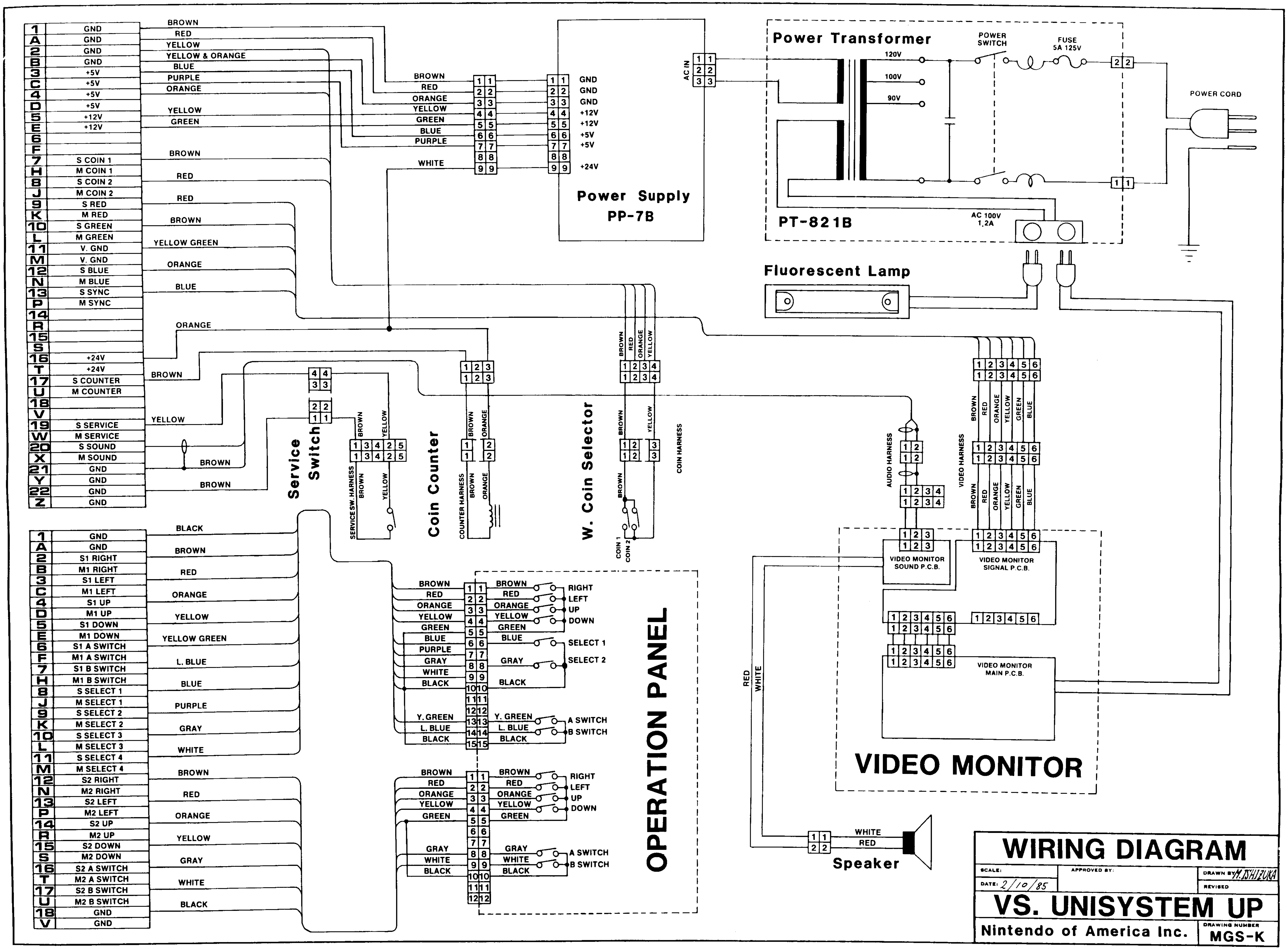



# WIRING DIAGRAM

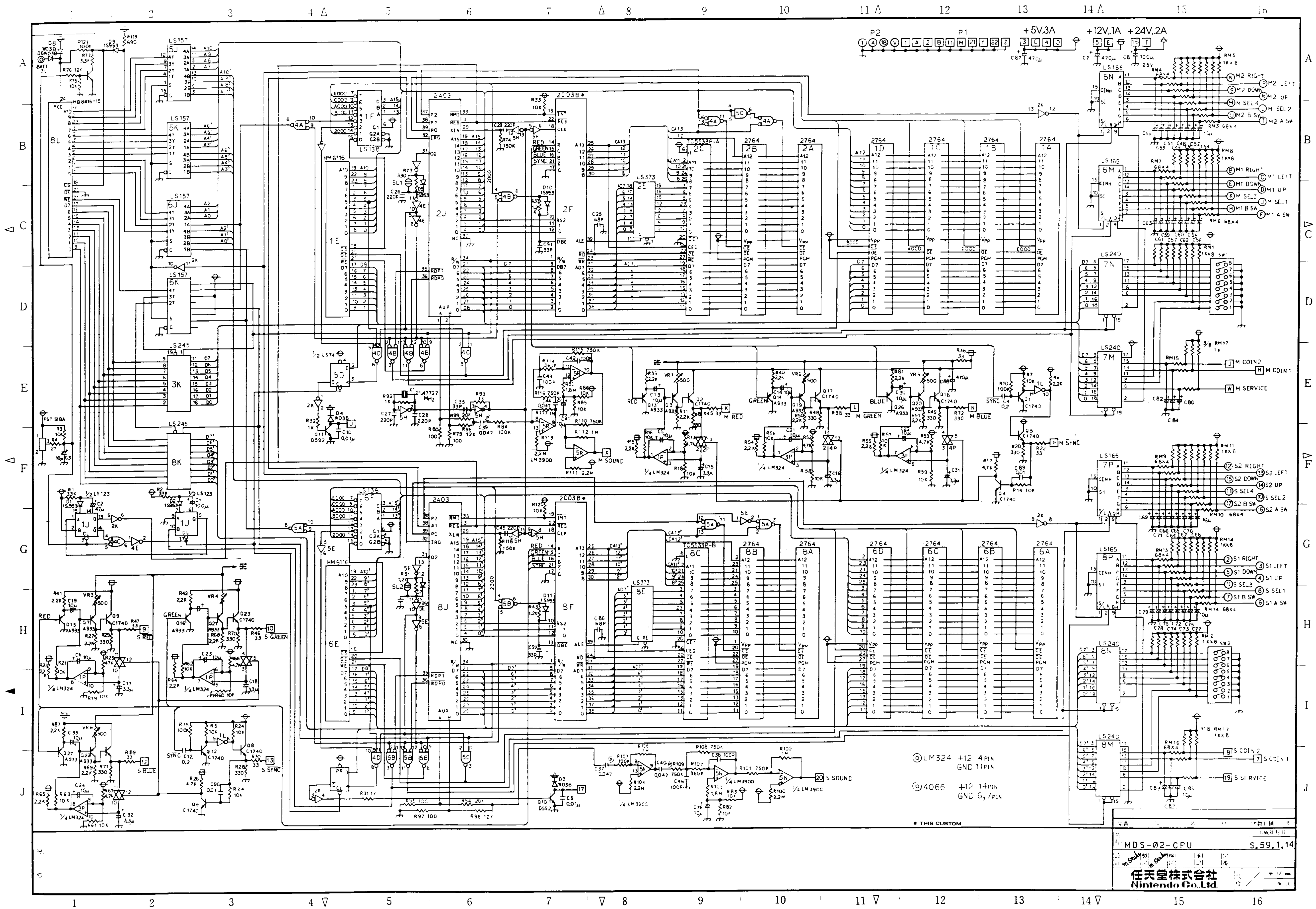
| SCALE: | APPROVED BY: | DRAWN BY M. ISHIZUKA |
|---|---|---|
| DATE: 3/10/84 | | REVISED |

## 062 FCC PC Board

Nintendo of America Inc. | DRAWING NUMBER



1 GND
A GND
2 GND
B GND
3 +5V
C +5V
4 +5V
D +5V
5 +12V
E +12V
6
F
7 S COIN 1
H M COIN 1
8 S COIN 2
J M COIN 2
9 S RED
K M RED
10 S GREEN
L M GREEN
11 V. GND
M V. GND
12 S BLUE
N M BLUE
13 S SYNC
P M SYNC
14
R
15
S
16 +24V
T +24V
17 S COUNTER
U M COUNTER
18
V
19 S SERVICE
W M SERVICE
20 S SOUND
X M SOUND
21 GND
Y GND
22 GND
Z GND
1 GND
A GND
2 S1 RIGHT
B M1 RIGHT
3 S1 LEFT
C M1 LEFT
4 S1 UP
D M1 UP
5 S1 DOWN
E M1 DOWN
6 S1 A SWITCH
F M1 A SWITCH
7 S1 B SWITCH
H M1 B SWITCH
8 S SELECT 1
J M SELECT 1
9 S SELECT 2
K M SELECT 2
10 S SELECT 3
L M SELECT 3
11 S SELECT 4
M M SELECT 4
12 S2 RIGHT
N M2 RIGHT
13 S2 LEFT
P M2 LEFT
14 S2 UP
R M2 UP
15 S2 DOWN
S M2 DOWN
16 S2 A SWITCH
T M2 A SWITCH
17 S2 B SWITCH
U M2 B SWITCH
18 GND
V GND
Power Supply
PP-7B
GND
GND
GND
+12V
+12V
+5V
+5V
+24V
AC IN
Power Transformer
120V
100V
90V
POWER SWITCH
FUSE 5A 125V
POWER CORD
PT-821B
AC 100V 1,2A
Fluorescent Lamp
Service Switch
SERVICE SW. HARNESS
Coin Counter
COUNTER HARNESS
W. Coin Selector
COIN HARNESS
COIN 1
COIN 2
AUDIO HARNESS
VIDEO HARNESS
VIDEO MONITOR SOUND P.C.B.
VIDEO MONITOR SIGNAL P.C.B.
VIDEO MONITOR MAIN P.C.B.
VIDEO MONITOR
OPERATION PANEL
RIGHT
LEFT
UP
DOWN
SELECT 1
SELECT 2
A SWITCH
B SWITCH
Speaker
WIRING DIAGRAM
SCALE:
APPROVED BY:
DRAWN BY M. ISHIZUKA
DATE: 2/10/85
REVISED
VS. UNISYSTEM UP
Nintendo of America Inc.
DRAWING NUMBER
MGS-K



+5V,3A
+12V,1A
+24V,2A
P2
P1
LM324 +12 4PIN GND 11PIN
4066 +12 14PIN GND 6,7PIN
● THIS CUSTOM
MDS-02-CPU
S.59.1.14
任天堂株式会社
Nintendo Co.,Ltd.